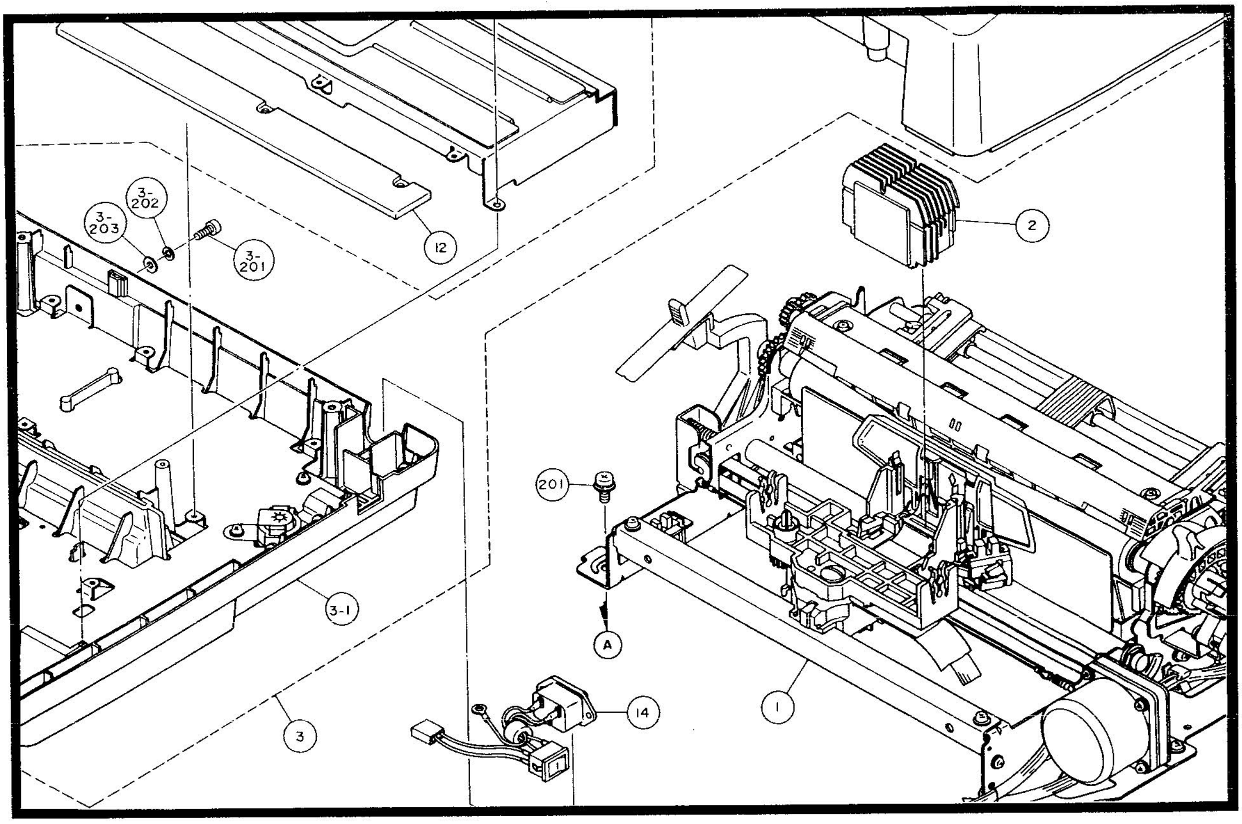
PINWRITER® SERIES

Maintenance Guide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NEC

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FEDERAL COMMUNICATIONS COMMISSION RADIO FREQUENCY INTERFERENCE STATEMENT

This unit has been type-tested and found to comply with the limits for a Class B computing device in accordance with the specifications for Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation.

Manufacturer's Instructions and User's responsibility to Prevent radio Frequency Interference

Manufacturer's Instructions

The user must observe the following precautions in installing and operating this device:

1. Opeate the equipment in strict accordance with the manufacturer's instructions for the model.
2. Plug the unit into a properly grounded wall outlet and use the power cord supplied with the unit, unmodified.
3. Always operate the unit with the factory-installed cover on the unit.
4. Make no modification to the euqipment which would affect its meeting the specified limits of the Rules.
5. Maintain the equipment in a satisfactory state of repair.
6. Use a shilded and properly grounded I/O cable to ensure compliance of this unit to the specified limits of the rules.

User's Responsibility

The user is ultimately responsible for correcting problems that arise from harmful radio-frequency emissions from equipment under his control. If this equipment does cause interference to radio or television reception (which can be determined by turning the equipment off and on), the user is encouraged to try to correct the interference by one of the following measures. All of these responsibilities and any others not mentioned are exclusively at the expense of the user.

1. Change in orientation of the receiving device antenna.
2. Change in orientation of the equipment.
3. Change in location of equipment.
4. Change in equipment power source.

If these attempts are unsuccessful, install one or all of the following devices:

1. Line isolation transformers
2. Line filters
3. Electro-magnetic shielding

If necessary, the user should consult the dealer, NEC, or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission to be helpful: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. government Printing Office, Washington, D.C. 20402, Stock No. 004-000-00345-4.

NOTE

The operator of a computing device may be required to stop operation his device upon finding that the device is causing harmful interference and it is in the public interest to stop operation until the interference problem has been corrected.

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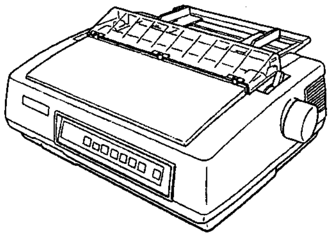
Abbreviations

ac	alternating current
ASCII	American Standard Code for Information Interchange
CG	character generator
CN	connector
cps	characters per second
CPU	central processing unit
dc	direct current
EEPROM	electrically erasable programmable ROM
FE	film end
FET	field-effect transistor
FG	frame ground
Gnd	ground
HP	home position
HS	high speed
IC	integrated circuit
in.	inches
IPB	illustrated parts breakdown
KB	kilobytes
LF	line feed
LQ	letter-quality
LSI	large scale integration
mm	millimeters
MPU	microprocessing unit
PCB	printed circuit board
PPS	pulses per second
PWM	pulse width modulation
RAM	random-access memory
RCC	ringing choke converter
ROM	read-only memory
SG	signal ground
SP	spacing
SW	switch
V	volts
Vac	volts ac

Section 1

General Description



The Pinwriter® P6200/P6300 and P60/P70 printers are high-quality, multimode dot matrix printers. The P6200/P60 models are 80-column printers and the P6300/P70 models are 136-column printers. In high-speed models all models print 300 characters per second (cps), in draft mode they print 250 cps, and in letter-quality mode they print 83 cps.

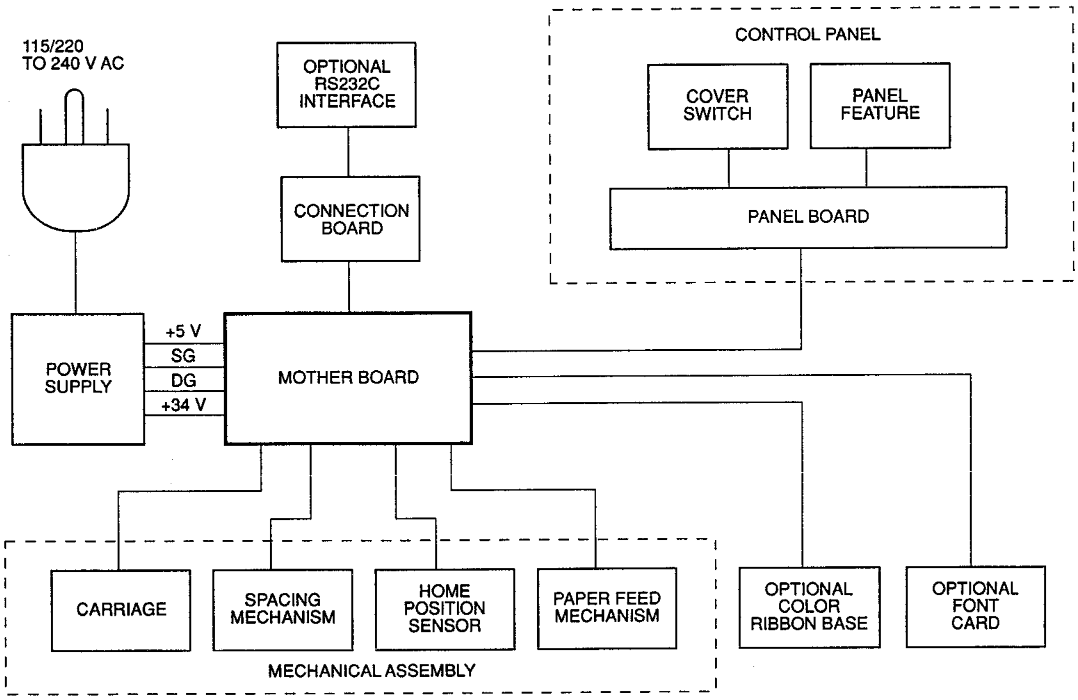

115/220
TO 240 V AC
OPTIONAL
RS232C
INTERFACE
CONTROL PANEL
COVER
SWITCH
PANEL
FEATURE
CONNECTION
BOARD
PANEL BOARD
POWER
SUPPLY
+5 V
SG
DG
+34 V
MOTHER BOARD
CARRIAGE
SPACING
MECHANISM
HOME
POSITION
SENSOR
PAPER FEED
MECHANISM
OPTIONAL
COLOR
RIBBON BASE
OPTIONAL
FONT
CARD
MECHANICAL ASSEMBLY

Figure 1-1 Pinwriter Block Diagram

MOTHER BOARD

The mother board is the main circuit board of the printer. It consists of the microprocessing unit (MPU) circuit, memory, and gate array (see Figure 1-2). Main Gate array's functions are parallel latch, interface and driver controller.

Microprocessing Unit

The microprocessing unit (MPU) µPD70208GF is the ultimate control for all printer functions. It controls the interface, memory, gate array, and timer by reading, paper status, print head temperature, and homing sensor status, as well as information from the control panel.

Memory

Printer memory consists of both random access memory (RAM) and read only memory (ROM). Only the two major types of RAM are described here - the image RAM and the receive buffer RAM. The program ROM, the character generator (CG) ROM, and EEPROM are also described.

The image RAM enables high-speed operation of the printing, backspace, delete, and cancel functions. It stores the image to be printed in the form of a bit pattern. The 48/80 kilobyte (KB) selectable receive buffer RAM stores the data received by the interface circuit.

The 128 KB program ROM (27C1001) contains the program that controls MPU operation. The 256 KB (µPD23C2000) standard CG ROM contains the resident character sets of the printer.

The 1 K-bit EEPROM (NMC9346) is used for mode settings: Print mode, Forms, Horizontal, and Interface.

Parallel Latch

The bit image information is moved from the image RAM to the parallel latch for controlling the print head driver. This information is then used as data for the printing operation.

Driver Controller

Driver controller controls the spacing motor driver circuit and line feed motor driver circuit.

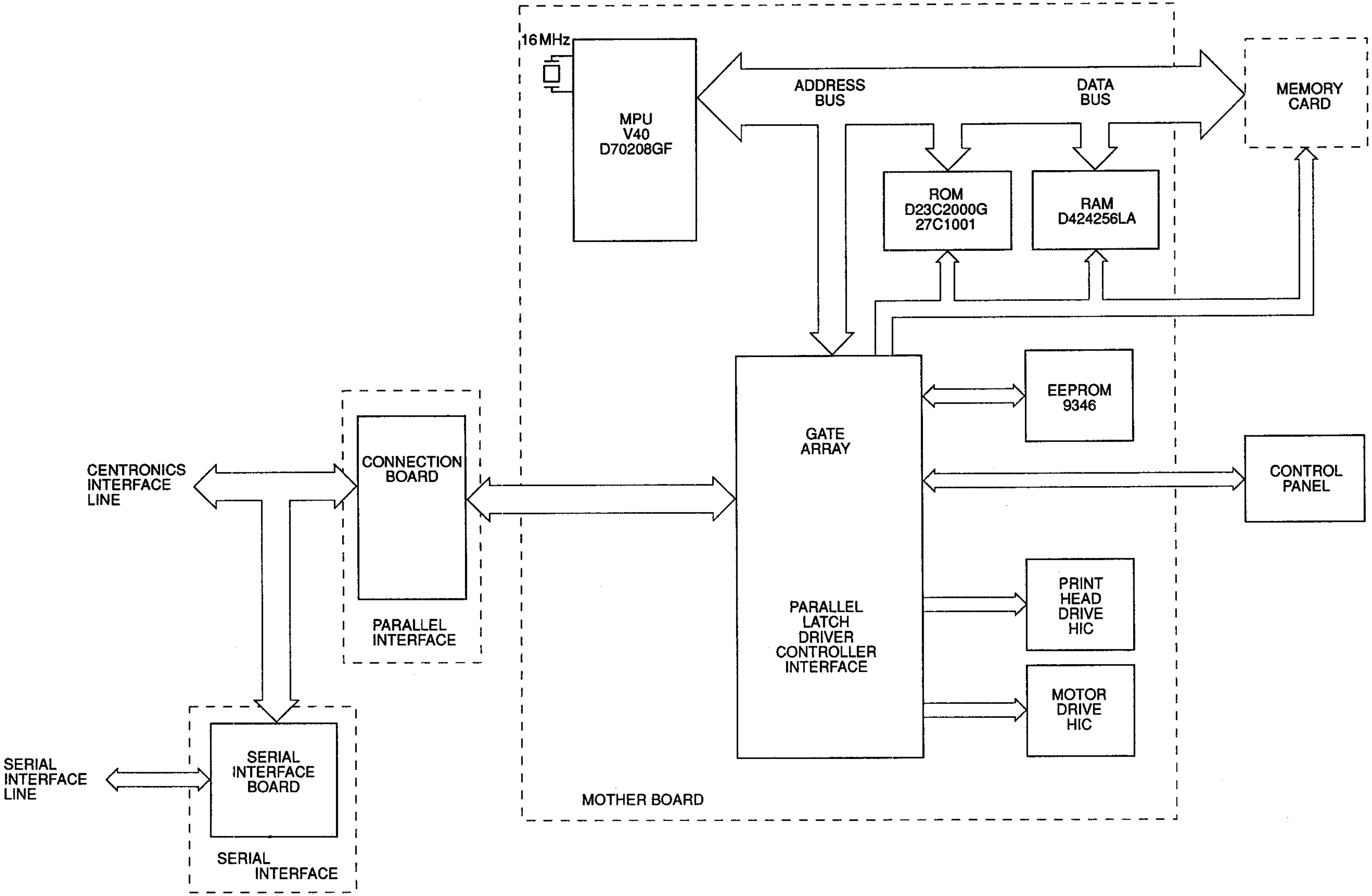

16MHz
MPU
V40
D70208GF
ADDRESS
BUS
DATA
BUS
MEMORY
CARD
ROM
D23C2000G
27C1001
RAM
D424256LA
GATE
ARRAY
PARALLEL
LATCH
DRIVER
CONTROLLER
INTERFACE
EEPROM
9346
CONTROL
PANEL
PRINT
HEAD
DRIVE
HIC
MOTOR
DRIVE
HIC
MOTHER BOARD
CONNECTION
BOARD
PARALLEL
INTERFACE
CENTRONICS
INTERFACE
LINE
SERIAL
INTERFACE
BOARD
SERIAL
INTERFACE
SERIAL
INTERFACE
LINE

Figure 1-2 Mother Board Simplified Block Diagram

Interface

The printer has either an IBM® compatible parallel interface or an RS-232C serial interface. The parallel interface supports control logic used on all IBM PC products and most clones. Parallel interface pin assignments are listed in Table 1-1 and serial interface pin assignments are listed in Table 1-2.

Table 1-1 Parallel Interface Pin Assignments

SIGNAL PIN	RETURN PIN	SIGNAL	DIRECTION	DESCRIPTION
1	19	$\overline{\text{Data Strobe}}$	To printer	Strobes a data byte to the printer. The minimum pulse width of the signal is 1 µs, active low.
2	20	Data 1	To printer	Data lines 1 through 8 transmit ASCII code. The lines are high (true) at logic 1 and low (false) at logic 0.
3	21	Data 2	To printer	The minimum pulse width of the signal is 2 µs.
4	22	Data 3	To printer	
5	23	Data 4	To printer	
6	24	Data 5	To printer	
7	25	Data 6	To printer	
8	26	Data 7	To printer	
9	27	Data 8	To printer	
10	28	$\overline{\text{Acknlg}}$	From printer	An 8-µs pulse on this status line indicates that the printer received a data byte and it can receive next data.
11	29	Busy	From printer	This signal goes high when the printer is busy because • the buffer is full. • the printer is initializing. • the printer is deselected. • a printer fault has occurred. • data is received and next data can not be received yet.

Table 1-1 Parallel Interface Pin Assignments (cont'd)

SIGNAL PIN	RETURN PIN	SIGNAL	DIRECTION	DESCRIPTION
12	30	Paper Empty	From printer	This status line goes high when the printer is out of paper.
13	–	Slct	From printer	This status line goes high when the printer is selected. The line is low when the printer is deselected.
14	–	Auto Feed XT	To printer	When this line is low at initializing, the printer performs an automatic line feed after CR code.
15	–	–	–	Not used.
16	–	SG	–	Signal ground.
17	–	FG	–	Frame ground.
18	–	+5 V (Direct)	–	+5 V
19, 20 21, 22 23, 24 25, 26 27, 28 29, 30	–	SG	–	Signal ground. Pin 19 is ground for Strobe, and pins 20 through 27 are ground for data lines 1 through 8, pin 28 is ground for Acknlg, pin 29 is ground for Busy, and pin 30 is ground for Input Prime.
31	30	Input Prime	To printer	A low on this line initializes the printer. The signal pulse width must be more than 15 µs.
32	–	Fault	From printer	This line goes low when the printer is • out of paper. • deselected. • in a fault state.
33	–	SG	–	Signal ground.
34	–	–	–	Not used.
35	–	–	–	Not used.
36	–	SG	–	Signal ground.

Table 1-2 Serial Interface Pin Assignments

SIGNAL/CONTROL LINES	DIRECTION OF SIGNAL	DESCRIPTION
Data Carrier Detect (DCD) (EIA pin 8)	To printer	This line must be active (on) for the Pinwriter to operate. The line goes active when the modem detects a carrier tone, indicating that the phone line is usable. When DCD, CTS, DSR signals are disabled, this line goes active even if this signal line is not connected.
Data Terminal Ready (DTR) (EIA pin 20)	From printer	This line is the same functional signal as Reverse Channel (SRTS).
Data Set Ready (DSR) (EIA pin 6)	To printer	This line must be active (on) for the Pinwriter to operate. The line goes active when the modem power is on and the modem is not in a test mode. When DCD, CTS, DSR signals are disabled, this line goes active even if this signal line is not connected.
Request to Send (RTS) (EIA pin 4)	From printer	This line goes active (on) when the Data Terminal Ready is available and when the modem replies with Data Set Ready.
Clear to Send (CTS) (EIA pin 5)	To printer	This line must be active for the Pinwriter to operate. The input signal from the modem goes active when the modem is ready for the Pinwriter to transmit. When DCD, CTS, DSR signals are disabled, this line goes active even if the signal line is not connected.
Transmitted Data (TXD) (EIA pin 2)	From printer	This line transmits ACSII-coded digital data to a modem. This line is held at Mark (logic "1") when no data is being transmitted.
Received Data (RXD) (EIA pin 3)	To printer	This line holds ASCII-coded digital data received by the Pinwriter. This line must be held at Mark (logic "1") when no data is being received from the modem.
Reverse Channel (SRTS) (EIA pin 19)	From printer	This line goes from active (on) to inactive (off) when any one of the following occurs. • 8-kilobyte receive buffer is almost full (8056 characters). • Printer is out of paper. • Printer's condition must be checked. • Printer's cover is open.

POWER SUPPLY

The Pinwriter can use three types of power supplies. The PSD Power (B) PCB, the PSD Power (C) PCB (808-891104-003-A) or the PSD Power (C) PCB (808-891104-303-A).

The power supply unit converts AC power into DC power and supplies DC voltage to the control circuit unit, the print head drive circuit and the motor drive circuit. The input voltage for these power supplies are shown in Table 1-3.

Table 1-3 Input Voltage Requirements

POWER SUPPLY PCB	AC VOLTS	HZ	AMPS	REMARKS
PSD Power (B) (808-891104-002-A)	115+/-15%	50/60	125V/5A	—
PSD Power (C) (808-891104-003-A)	220-240V+/-10%	50/60	250V/3.15A	Used for only Japan products.
PSD Power (C) (808-891104-303-A)	220-240V+/-10%	50/60	250V/3.15A	Used for only U. K. products.

The power supply circuit supplies +5V to the control circuit and +34V to the drive circuit of the print head and the motor. The current capacity corresponding to each output votage is shown in Table 1-4.

Table 1-4 Output Voltage Capacity

DC VOLTS	AMPS
5+/-5%	2 Max.
34+/-7%	4.5 Average

Figure 1-3 shows the block diagram for the PSD Power (B) power supply and Figure 1-4 shows the block diagram for the PSD Power (C) (808-891104-003-A) and Figure 1-5 shows the block diagram for the PSD Power (C) (808-891104-303-A) power supply.

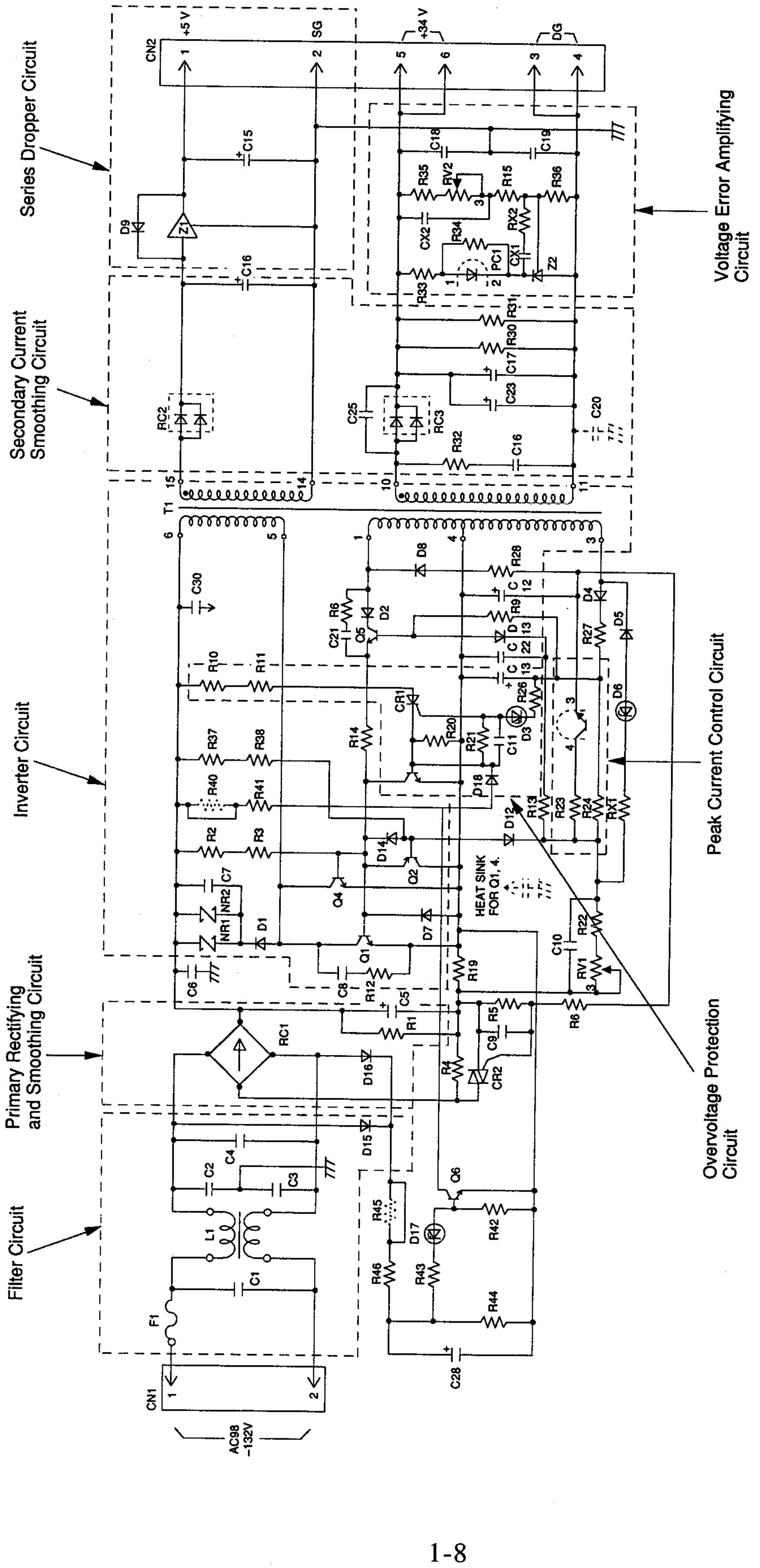

Filter Circuit
Primary Rectifying and Smoothing Circuit
Inverter Circuit
Secondary Current Smoothing Circuit
Series Dropper Circuit
Voltage Error Amplifying Circuit
Peak Current Control Circuit
Overvoltage Protection Circuit
CN1
AC98 -132V
F1
C1
L1
C2
C3
C4
RC1
D15
D16
C6
NR1
NR2
C7
D1
R2
R3
R40
R41
R37
R38
R10
R11
C30
T1
Q1
Q2
Q4
Q5
Q6
D2
D7
D8
D14
C21
R6
R14
CR1
R20
R21
C11
D3
D18
D12
R12
C8
C5
R1
R19
R4
R5
C9
CR2
HEAT SINK FOR Q1, 4.
R26
C 13
C 22
D 13
R9
C 12
R28
D4
D5
D6
R27
R13
R23
R24
RX1
R22
C10
RV1
R8
R45
D17
R46
R43
R42
R44
C28
RC2
RC3
C25
R32
C16
C23
C17
C20
R30
R31
R33
PC1
CX1
CX2
R34
Z2
RX2
RV2
R35
R15
R36
C18
C19
D9
Z1
C15
CN2
+5 V
SG
+34 V
DG

Figure 1-3 PSD Power (B) (808-891104-002-A) Block Diagram

PSD Power (B) Power Supply (808-891104-002-A)

The power supply consists of a filter circuit, primary side rectifying and smoothing circuit, inverter circuit, peak current control circuit, overvoltage protection circuit, secondary side smoothing circuit, series dropper circuit and voltage error amplifying circuit.

The +34V output voltage is generated by a self-excited oscillator using a ringing choke converter (RCC), and stabilized by controlling currents flowing through the primary winding of a transformer of the inverter circuit.

The +5V output voltage is stabilized by rectifying and smoothing the output voltage of the secondary winding of the transformer for the series dropper, and stepping it down with the series dropper circuit. In reality, the series dropper circuit uses a 3-terminals regulator.

FILTER CIRCUIT

The filter circuit consists of a capacitor and choke coil. It prevents and outer high-frequency noise from flowing into the power circuit, or a high-frequency noise generated inside the power circuit from flowing outside.

PRIMARY RECTIFYING AND SMOOTHING CIRCUIT

This circuit converts the AC input voltage, which has passed through the filter circuit, into high DC voltage by full-wave rectifying the AC input voltage, and smoothing it with a capacitor.

INVERTER CIRCUIT

The inverter circuit consists of a transformer, power transistors (Q1, Q4), resistor for starting the circuit, drive circuit, resistor which detects currents flowing through the primary winding of the transformer and surge killer circuit.

PEAK CURRENT CONTROL CIRCUIT

This circuit controls the peak value of currents flowing through the primary winding of a transformer to stabilize the +34V output voltage. The peak value of currents is controlled by transmitting a signal from the voltage error amplifying circuit, which will be described later, to this circuit through a photocoupler.

This circuit consists of a transistor (Q2) for leading in the base currents of power transistors (Q1, Q4), output transistor of the photocoupler and resistor.

Currents flowing through the output transistor of the photocoupler increase or decrease depending upon signals from the differential voltage amplifier circuit. When currents of the output transistor have increased, the base current of the power transistors (Q1, Q4) flows into the collector of the transistor (Q2). In this case, the power transistors (Q1, Q4) is abruptly turned off. In this case, the peak value of currents flowing through the output transistor of the photocoupler have decreased, the base current of the power transistors (Q1, Q4) does not flow very much into the collector of the transistor (Q2). In this case, the peak value of currents flowing through the primary winding of the transformer is high.

SECONDARY CURRENT SMOOTHING CIRCUIT

This circuit is a half-wave rectifier circuit consisting of a diode and capacitor. Secondary current smoothing circuits may be classified into two types: a rectifying and smoothing circuit for +5V, and a rectifier circuit for +34V.

SERIES DROPPER CIRCUIT

The series dropper circuit consists of a 3-terminal regulator IC (Z1). It receives the voltage, which has been rectified and smoothed by the +5V rectifying and smoothing circuit, at the input terminal of the 3-terminal regulator IC, and provides +5V as an output voltage of the 3-terminals regulator.

VOLTAGE ERROR AMPLIFYING CIRCUIT

The voltage error amplifying circuit consists of a shunt regulator, input diode of the photocoupler and a few resistors, and is mounted in the +34V output circuit.

This circuit compares the +34V output voltage value with the reference voltage of the shunt regulator, converts the differential voltage into a current, and applies the current between the cathode and anode of the shunt regulator. In this case, the current flows also into a diode of the photocoupler because the input diode of the photocoupler is coonnected also with the cathode of the shunt regulator.

This current decreases when the +34V output voltage drops, and increases when the +34V output voltage rises. It is fed back to the primary side via the photocoupler.

OVERVOLTAGE PROTECTION CIRCUIT

The overvoltage protection circuit prevents the output voltage from rising abnormally when the photocoupler circuit is opened or damaged. It consists of a photothyristor, Zener diode and a few resistors, and is connected to an auxiliary winding of the transormer.

This circuit detects a rise of the +34V output voltage from a rise of the voltage of the auxiliary winding of the transformer. When, for instance, the photocoupler is damaged, and the +34V output voltage rises, the voltage of the auxiliary sending of the transformer also rises. In this case, the voltage of the auxiliary winding triggers the thyristor, stops the oscillation of the power circuit, and cuts off the output voltage.

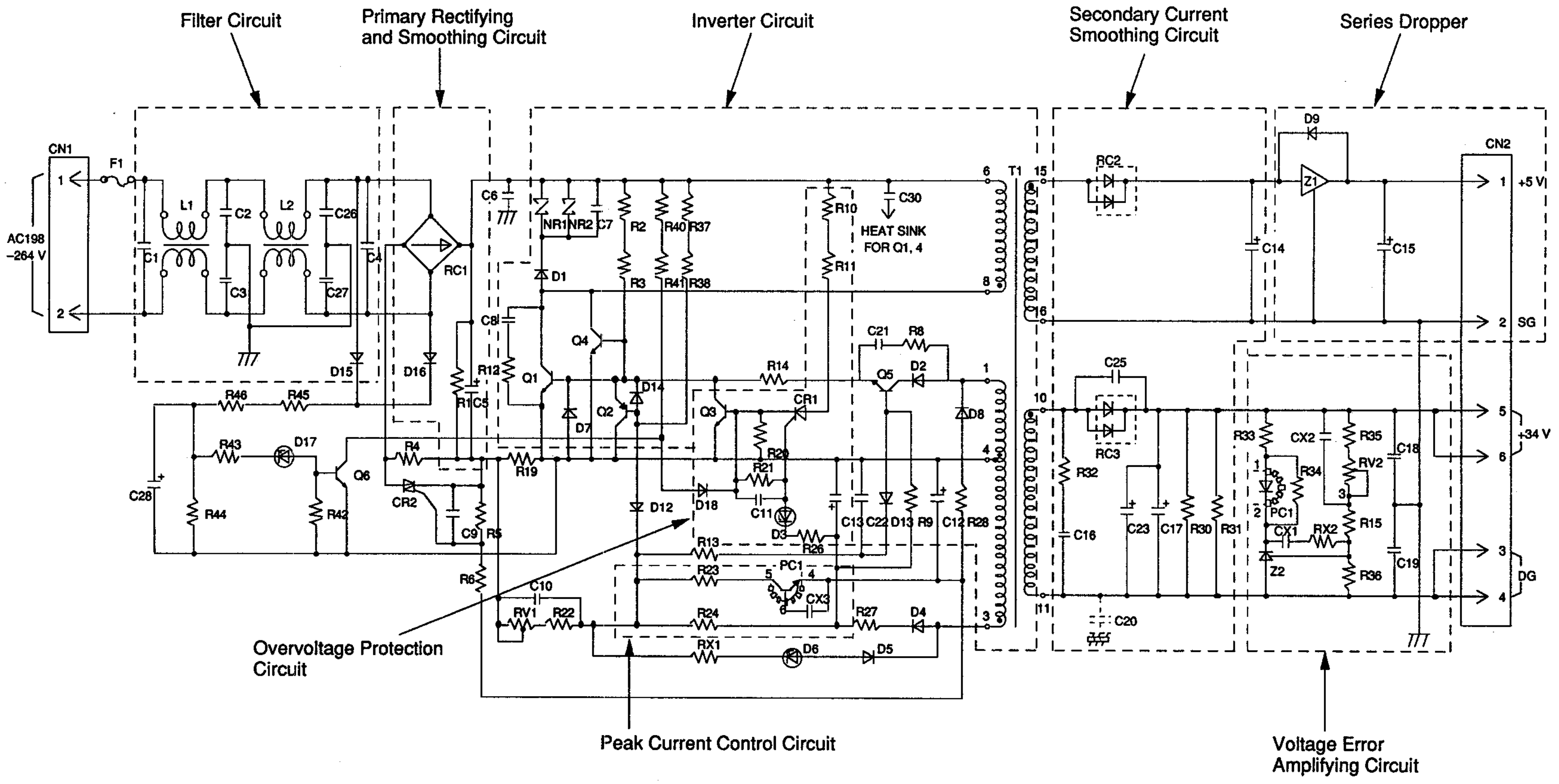

Filter Circuit
Primary Rectifying and Smoothing Circuit
Inverter Circuit
Secondary Current Smoothing Circuit
Series Dropper
Overvoltage Protection Circuit
Peak Current Control Circuit
Voltage Error Amplifying Circuit
AC198 –264 V
CN1
F1
L1
L2
C1
C2
C3
C4
C26
C27
RC1
D15
D16
R46
R45
R43
D17
Q6
R44
R42
C28
CR2
R4
R1
C5
R12
C8
C9
R5
R6
R19
C10
RV1
R22
C6
NR1
NR2
C7
D1
Q1
Q4
Q2
D7
D14
R2
R3
R40
R41
R37
R38
R10
R11
C30
HEAT SINK FOR Q1, 4
R14
CR1
Q3
R20
R21
C11
D3
D18
D12
R13
R23
R24
RX1
PC1
CX3
R26
D6
D5
D4
R27
C21
R8
Q5
D2
D8
C13
C22
D13
R9
C12
R28
T1
RC2
RC3
C25
R32
C16
C20
C23
C17
R30
R31
C14
D9
Z1
C15
R33
CX2
R34
R35
RV2
R15
CX1
RX2
Z2
R36
C18
C19
CN2
+5 V
SG
+34 V
DG

Figure 1-4 PSD Power (C) (808-891104-003-A) Block Diagram

PSD Power (C) Power Supply (808-891104-003-A)

The power supply consists of a filter circuit, primary side rectifying and smoothing circuit, inverter circuit, peak current control circuit, overvoltage protection circuit, secondary side smoothing circuit, series dropper circuit and voltage error amplifying circuit.

The +34V output voltage is generated by a self-excited oscillator using a ringing choke converter (RCC), and stabilized by controlling currents flowing through the primary winding of a transformer of the inverter circuit.

The +5V output voltage is stabilized by rectifying and smoothing the output voltage of the secondary winding of the transformer for the series dropper, and stepping it down with the series dropper circuit. In reality, the series dropper circuit uses a 3-terminals regulator.

FILTER CIRCUIT

The filter circuit consists of a capacitor and choke coil. In prevents an outer high-frequency noise from flowing into the power circuit, or a high-frequency noise geneerated inside the power circuit from flowing outside.

PRIMARY RECTIFYING AND SMOOTHING CIRCUIT

This circuit converts the AC input voltage, which has passed through the filter circuit, into high DC voltage by full-wave rectifying the AC input voltage, and smoothing it with a capacitor.

INVERTER CIRCUIT

The inverter circuit consists of a transformer, power transistor (Q2), resistor for starting the circuit, drive circuit, resistor which detects currents flowing through the primary winding of the transormer and surge killer circuit.

PEAK CURRENT CONTROL CIRCUIT

This circuit controls the peak value of currents flowing through the primary winding of a transformer to stabilize the +34V output voltage. The peak value of currents is controlled by transmitting a signal from the voltage error amplifying circuit, which will be described later, to this circuit through a photocoupler.

This circuit consists of a transistor (Q3) for leading in the base currents of a power transistor (Q2), output transistor of the photocoupler and resistor.

Currents flowing through the output transistor of the photocoupler increase or decrease depending upon signals from the differential voltage amplifier circuit. When currents of the output transistor have increased, the base current of the power transistors (Q2) flow into the collector of the transistor (Q3). In this case, the power transistors (Q1, Q4) is abruptly turned off. In this case, the peak value of currents flowing through the primary winding of the transformer is low.

On the contrary, when currents flowing through the output transistor of the photocoupler have decreased, the base current of the power transistor (Q2) does not flow very much into the collector of the transistor (Q3). In this case, the peak value of currents flowing through the primary winding of the transformer is high.

SECONDARY CURRENT SMOOTHING CIRCUIT

This circuit is a half-wave rectifier circuit consisting of a diode and capacitor. Secondary current smoothing circuits may be classified into two types: a rectifying and smoothing circuit for +5V and a rectifier circuit for +34V.

SERIES DROPPER CIRCUIT

The series dropper circuit consists of a 3-terminal regulator IC (Z1). It receives the voltage, which has been rectified and smoothed by the +5V rectifying and smoothing circuit, at the input terminal of the 3-terminal regulator IC, and provides +5V as an output voltage of the 3-terminals regulator.

VOLTAGE ERROR AMPLIFYING CIRCUIT

The voltage error amplifying circuit consists of a shunt regulator, input diode of the photocoupler and a few resistors, and is mounted in the +34V output circuit.

This circuit compares the +34V output voltage value with the reference voltage of the shunt regulator, converts the differntial voltage into a current, and applies the current between the cathode and anode of the shunt regulator. In this case, the current flows also into a diode of the photocoupler because the input diode of the photocoupler is connected also with the cathode of the shunt regulator.

This current decreases when the +34V output voltage drops, and increases when the +34V output voltage rises. It is fed back to the primary side via the photocoupler.

OVERVOLTAGE PROTECTION CIRCUIT

The overvoltage protection circuit prevents the output voltage from rising abnormally when the photocoupler circuit is opened or damaged. It consists of a photothyristor, Zener diode and a few resistors, and is mounted in the +34V output circuit.

This circuit detects a rise of the +34V put it voltage by comparing the +34V output voltage with the Zener voltage of the Zener diode. When the +34V output voltage has risen, currents flow to the input diode of the photothyristor, an output thyristor of the photothyristor is turned on, the oscillation of the power circuit is stopped, and thus the output voltage is cut off.

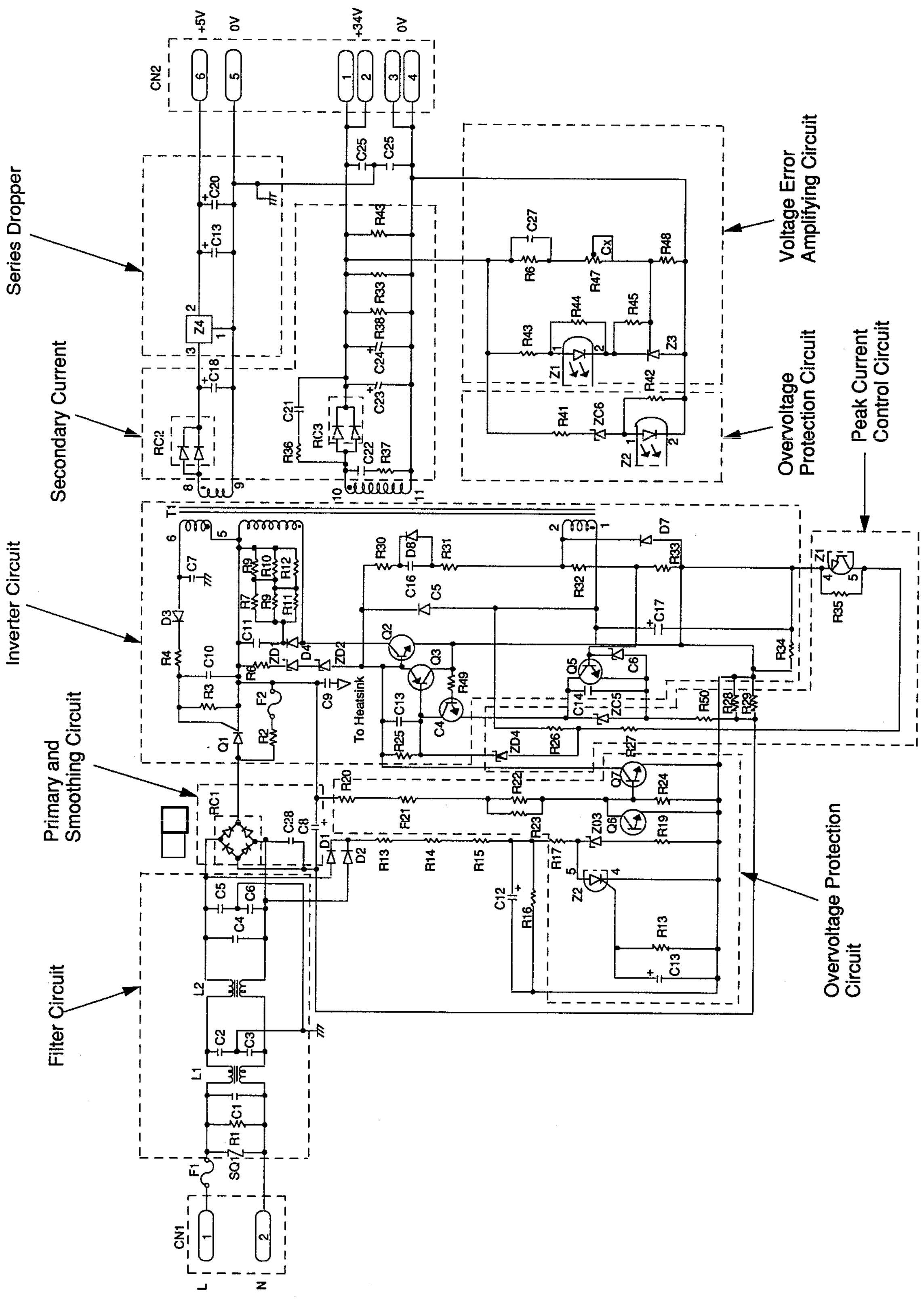

Series Dropper
Secondary Current
Inverter Circuit
Primary and Smoothing Circuit
Filter Circuit
Voltage Error Amplifying Circuit
Overvoltage Protection Circuit
Peak Current Control Circuit
Overvoltage Protection Circuit
CN1
L
N
1
2
F1
SQ1
R1
C1
L1
C2
C3
L2
C4
C5
C6
RC1
C28
C8
D1
D2
Q1
R2
F2
R3
R4
C10
D3
C7
T1
6
5
R5
ZD
D4
ZD2
C11
R7
R8
R9
R10
R11
R12
C9
To Heatsink
Q2
Q3
R49
C4
C13
R25
C16
D8
R30
R31
C5
R20
R21
R22
R23
R13
R14
R15
C12
R16
R17
Z2
ZD3
Q6
R19
Q7
R24
R27
ZD4
R26
C14
ZC5
Q5
C6
C17
R32
R33
D7
R34
R35
Z1
R50
R28
R29
CN2
+5V
0V
+34V
0V
RC2
8
9
C18
Z4
C13
C20
RC3
R36
C21
C22
R37
10
11
C23
C24
R38
R33
R43
C25
C25
R6
C27
R47
Cx
R48
R43
R44
R45
Z3
Z1
R42
R41
ZC6
Z2

Figure 1-5 PSD Power (C) (808-891104-303-A) Block Diagram

PSD Power (C) Power Supply (808-891104-303-A)

The power supply consists of a filter circuit, primary side rectifying and smoothing circuit, inverter circuit, peak current control circuit, overvoltage protection circuit, secondary side smoothing circuit, series dropper circuit and voltage error amplifying circuit.

The +34V output voltage is generated by a self-excited oscillator using a renging choke converter (RCC), and stabilized by controlling currents flowing through the primary winding of a transformer of the inverter circuit.

The +5V output voltage is stabilized by rectifying and smoothing the output voltage of the secondary winding of the transformer for the series dropper, and stepping it down with the series dropper circuit. In reality, the series dropper circuit uses a 3-terminals rgulator.

FILTER CIRCUIT

The filter circuit consists of a capacitor and choke coil. It prevents an outer high-frequency noise from flowing into the power circuit, or a high-frequency noise generated inside the power circuit from flowing outside.

PRIMARY RECTIFYING AND SMOOTHING CIRCUIT

This circuit converts the AC input voltage, which has passed through the filter circuit, into high DC voltage by full-wave rectifying the AC input voltage, and smoothing it with a capacitor.

INVERTER CIRCUIT

The inverter circuit consists of a transformer, power transistor (Q2), resistor for starting the circuit, drive circuit, resistor which detects currents flowing through the primary winding of the transformer and surge killer circuit.

PEAK CURRENT CONTROL CIRCUIT

This circuit controls the peak value of currents flowing through the primary winding of a transformer to stabilize the +34V output voltage. The peak value of currents is controlled by transmitting a signal from the voltage error amplifying circuit, which will be described later, to this circuit through a photocoupler.

This circuit consists of a transistor (Q3) for leading in the base current of a power transistor (Q2), output transistor of the photocoupler and resistor.

Currents flowing through the output transistor of the photocoupler increase or decrease depending upon signals from the differntial voltage amplifier circuit. When currents of the output transistor have increased, the base current of the power transistors (Q2) flows into the collector of the transistor (Q3). In this case, the power transistors (Q2) is abruptly turned off. In this case, the peak value of currents flowing through the primary winding of the transofmer is low.
On the contrary, when currents flowing through the output trnsistor of the photocoupler have decreased, the base current of the power transistor (Q2) does not flow very much into the collector of the transistor (Q3). In this case, the peak

value of currents flowing through the primary winding of the transformer is high.

SECONDARY CURRENT SMOOTHING CIRCUIT

This circuit is a half-wave rectifier circuit consisting of a diode and capacitor. Secondary current smoothing circuits may be classified into two types: a rectifying and smoothing circuit for +5V, and a rectifier circuit for +34V.

SERIES DROPPER CIRCUIT

The series dropper circuit consists of a 3-terminal regulator IC (Z4). It receives the voltage, which has been rectified and smoothed by the +5V rectifying and smoothing circuit, at the input terminal of the 3-terminal egulator IC, and provides +5V as an output voltage of the 3-terminals regulator.

VOLTAGE ERROR AMPLIFYING CIRCUIT

The voltage error amplifying circuit consists of a shunt regulator, input diode of the photocoupler and a few resistors, and is mounted in the +34V output circuit.

This circuit compares the +34V output voltage value with the reference voltage of the shunt regulator, converts the differential voltage into a current, and applies the current between the cathode and anode of the shunt regulator. In this case, the current flows also into a diode of the photocoupler because the input diode of the photocoupler is connected also with the cathode of the shunt regulator.

This current decreases when the +34V output voltage drops, and increases when the +34V output voltage rises. It is fed back to the primary side via the photocoupler.

OVERVOLTAGE PROTECTION CIRCUIT

The overvoltage protection circuit prevents the output voltage from rising abnormally when the photocoupler circuits is opened or damaged.
It consists of a photorhyristor, Zener diode and a few resistors, and is mounted in the +34V output circuit.

This circuit detects a rise of the +34V output voltage by comparing the +34V output coltage with the Zener voltage of the Zener diode. When the +34V output voltage has risen, currents flow to the input diode of the photorhyristor, an output thyristor of the photothyristor is turned on the oscillation of the power circuit is stopped, and thus the output voltage is cut off.

MECHANICAL ASSEMBLY

The mechanical assembly consists of following subassemblies.

- Print Head Assembly
- Carrier Assembly
- Spacing Mechanism
- Home Position Switch Assembly
- Paper Feed Mechanism
- Push Tractor
- Ribbon Feed Assembly
- Paper-Out Detector Mechanism
- Ribbon Sensor Assembly

Print Head Assembly

The print head is mounted on the carrier and moves bidirectionally at a speed of up to 300 cps (at high-speed draft 12). The print head assembly consists of the following components (see Figure 1-6).

- 24 Pins
- 24 Corresponding Armatures, Magnets, and Solenoids
- Print Wire Guides

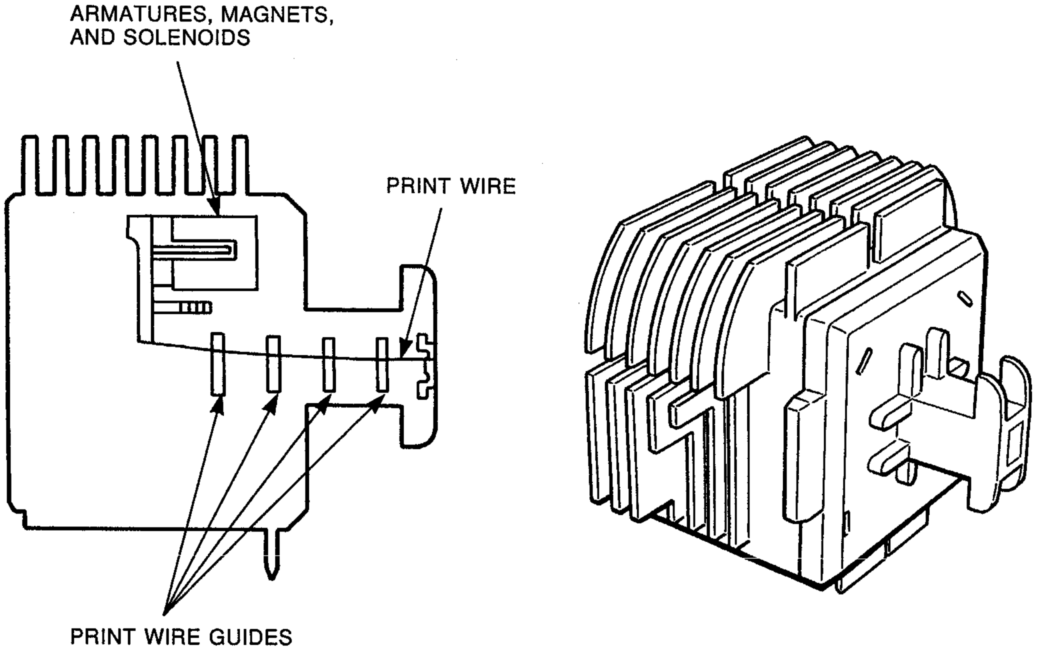


Figure 1-6 Print Head Assembly

The print wire guide, located at the tip of the print head, arranges the 24 pins in two staggered rows. The guide plate supports the pins at the center of the print head.

Printing occurs in the following manner. When a solenoid is energized, it moves an armature. This motion causes the pin that corresponds to the armature to strike the ribbon, printing a dot on the paper. An attached spring returns the pin to its resting position. Pins strike the ribbon simultaneously to form sequential rows until the dots form a complete character on the paper.

Carrier Assembly

The carrier assembly consists of a carrier, card holder, and print head assembly (see Figure 1-7). The carrier rides on a guide shaft and slides along by the front stay. The card holder helps guide the paper around the platen and stabilize ribbon movement. The copy control lever located on the left end of the guide shaft allows you to adjust the gap between the print head and the platen.

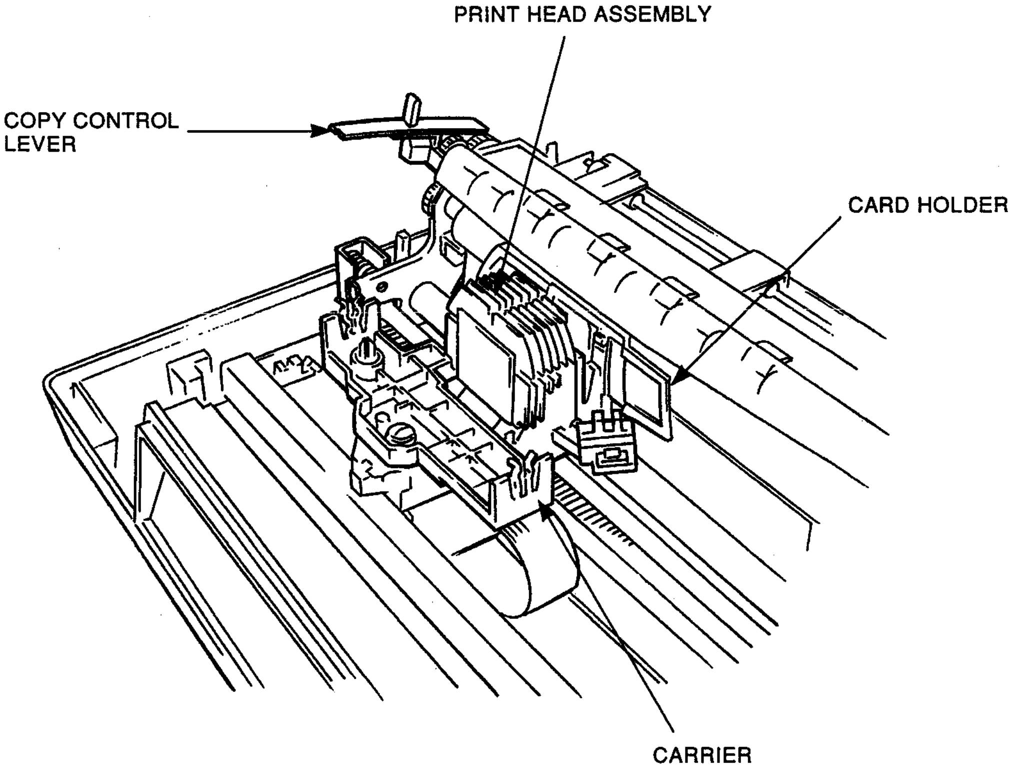

PRINT HEAD ASSEMBLY
COPY CONTROL LEVER
CARD HOLDER
CARRIER

Figure 1-7 Carrier Assembly

Spacing Mechanism

The spacing mechanism consists of a spacing motor, spacing motor pulley, tension spring, tension arm, driven pulley, pulley shaft, driven pulley collar and drive belt (see Figure 1-8). The looped drive belt is stretched by the spacing motor pulley and driven pulley. The carrier is fixed to the drive belt, and moves along the guide shaft and front stay according to the forward or reverse motion of the spacing motor.

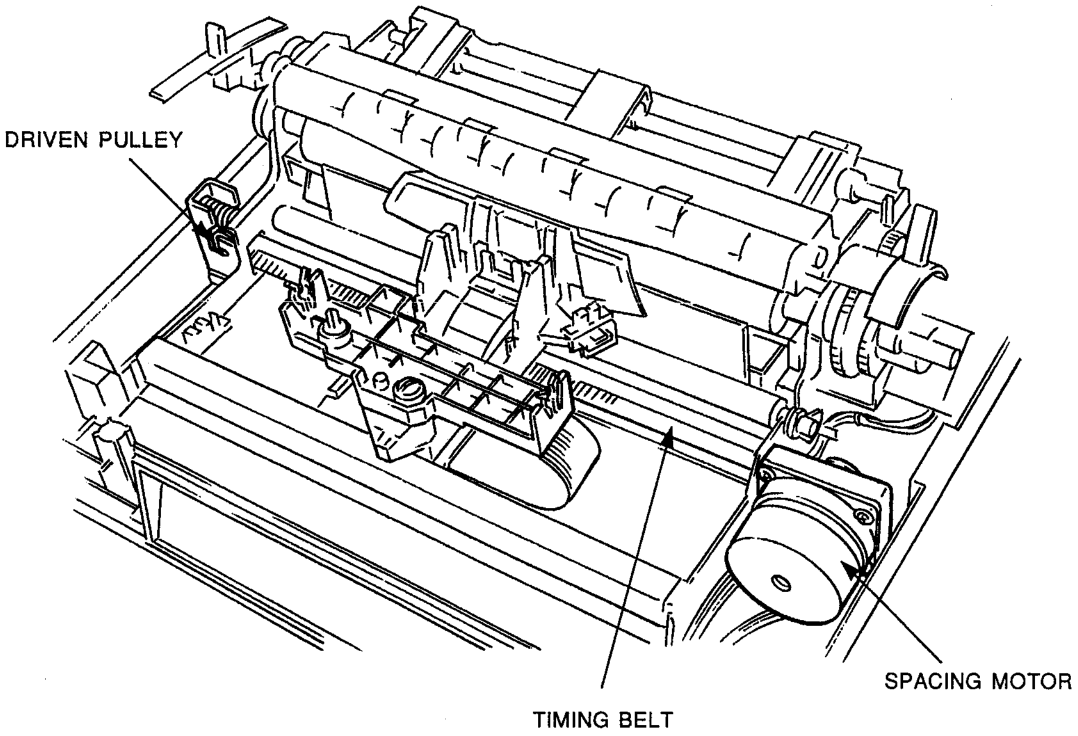


Figure 1-8 Spacing Assembly

Home Position Sensor Assembly

The home position sensor assembly consists of the photosensor assembly and sensor holder. Located on the frame at the far left side of the carrier, it detects the print head home position (see Figure 1-9). At power on, the print head automatically moves to the left until reaches the home position sensor and then stops. If the print head is at the left of the photosensor assembly already, it moves slightly to the right and then back to the home position.

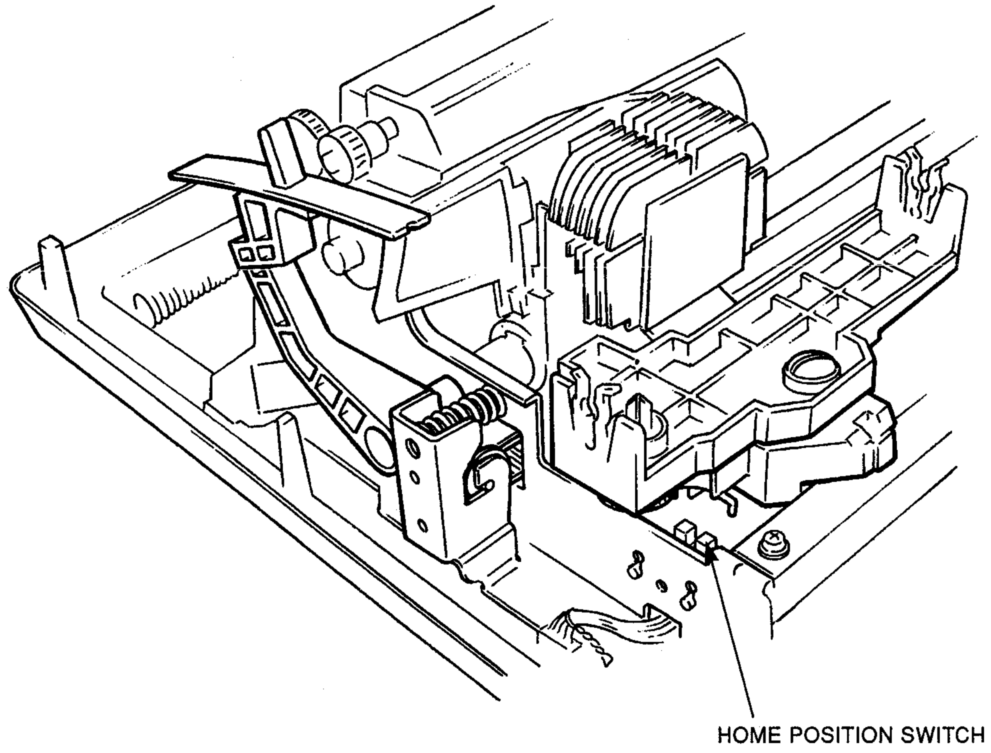


Figure 1-9 Home Position Switch Assembly

Paper Feed Mechanism

The paper feed mechanism feeds the paper by means of a line feed motor (see Figure 1-10). The motion of the line feed motor is transmitted to the platen or the push tractor through the tractor gear by setting the paper selection lever. Two steps of the motor equals 1/360-inch of paper movement. A unit of minimum movement is two steps at least. During tractor feed, paper feeds bidirectionally in the same 1/360-inch increments.

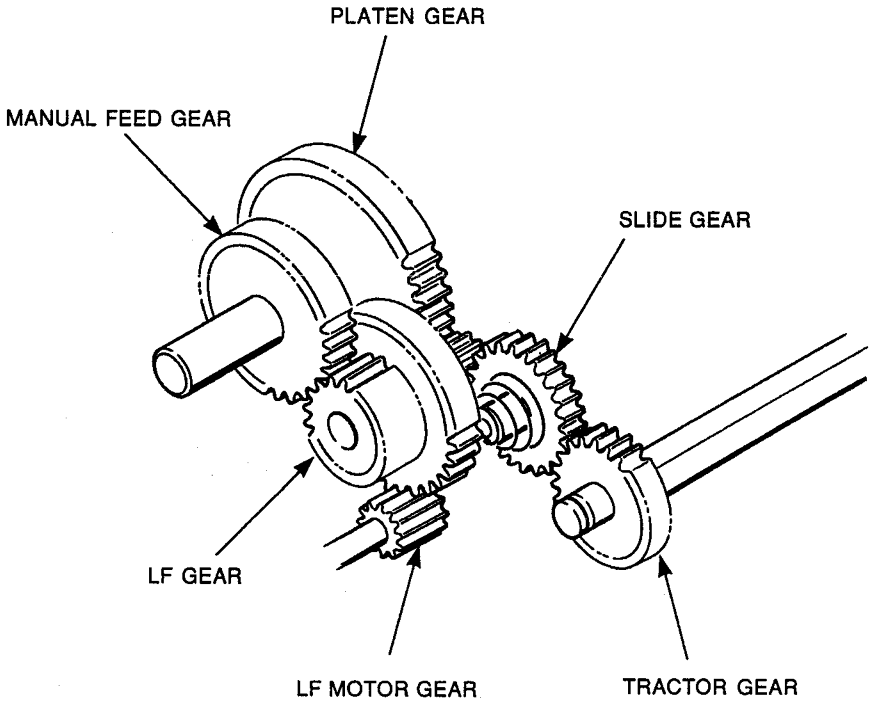

PLATEN GEAR
MANUAL FEED GEAR
SLIDE GEAR
LF GEAR
LF MOTOR GEAR
TRACTOR GEAR

Figure 1-10 Paper Feed Assembly

Ribbon Feed Assembly

Regardless of whether the carrier is moving left to right or right to left, the ribbon feed assembly feeds ribbon in one direction only by means of the torque piece gear (see Figure 1-11). The torque piece gear rotates in one direction. It is driven by the ribbon drive engaging with the ribbon feed pulley and ribbon feed wire (see Figure 1-12).

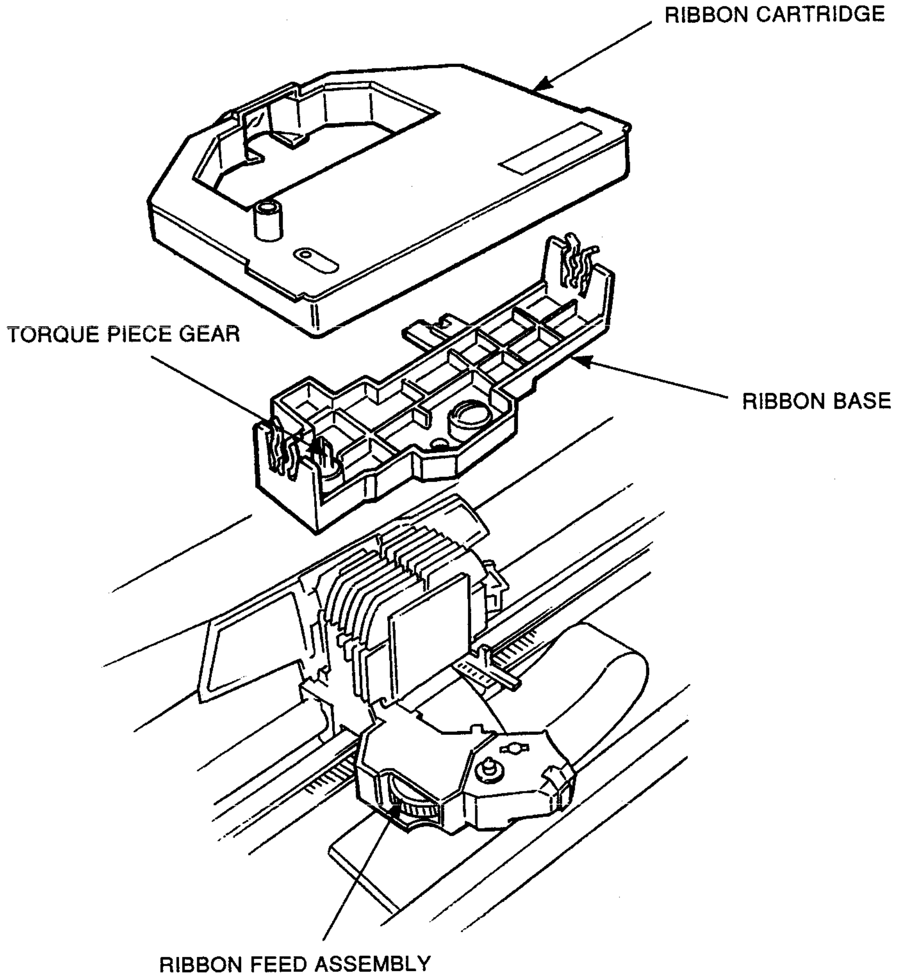

RIBBON CARTRIDGE
TORQUE PIECE GEAR
RIBBON BASE
RIBBON FEED ASSEMBLY

Figure 1-11 Ribbon Feed Assembly

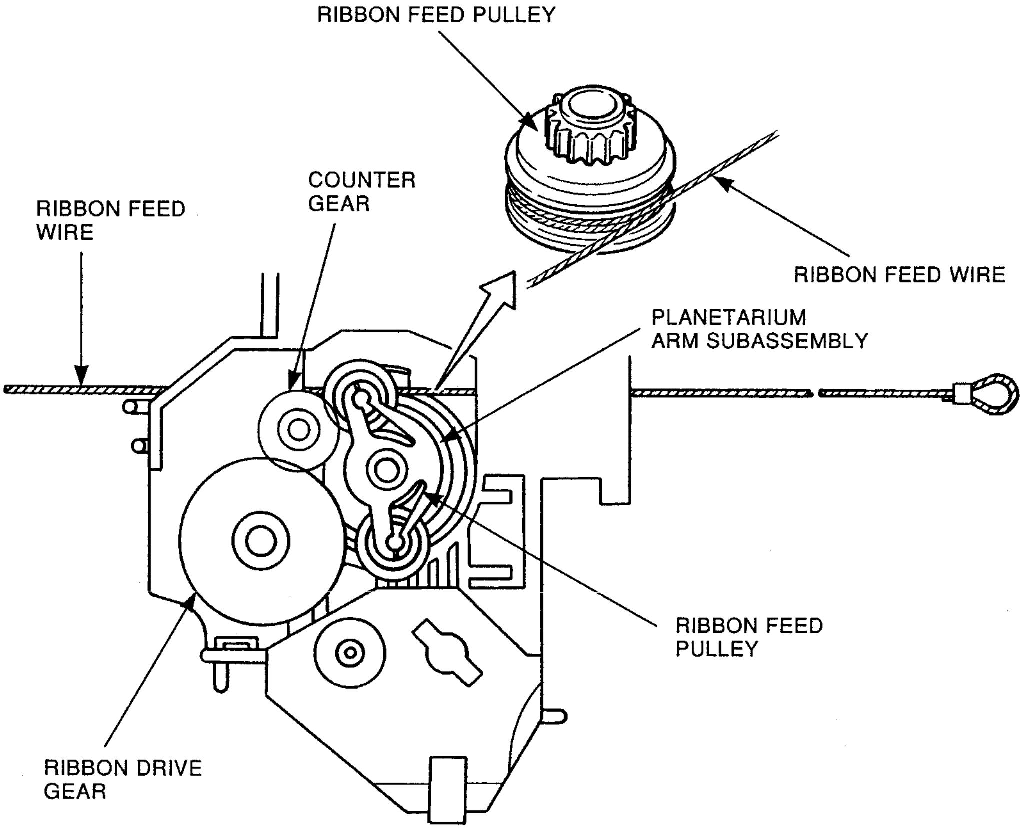

RIBBON FEED PULLEY
COUNTER GEAR
RIBBON FEED WIRE
RIBBON FEED WIRE
PLANETARIUM ARM SUBASSEMBLY
RIBBON FEED PULLEY
RIBBON DRIVE GEAR

Figure 1-12 Ribbon Feed Mechanism

Paper-Out Detector Mechanism

The paper-out detector mechanism consists of the photo sensor assembly, sensor bracket and sensor levers which are friction MDL lever, rear paper end lever, bottom MDL lever (see Figure 1-13). When the printer runs out of paper, the sensor lever blocks photo sensor. When paper supply exists, the sensor lever moves away from photo sensor, making detection possible.

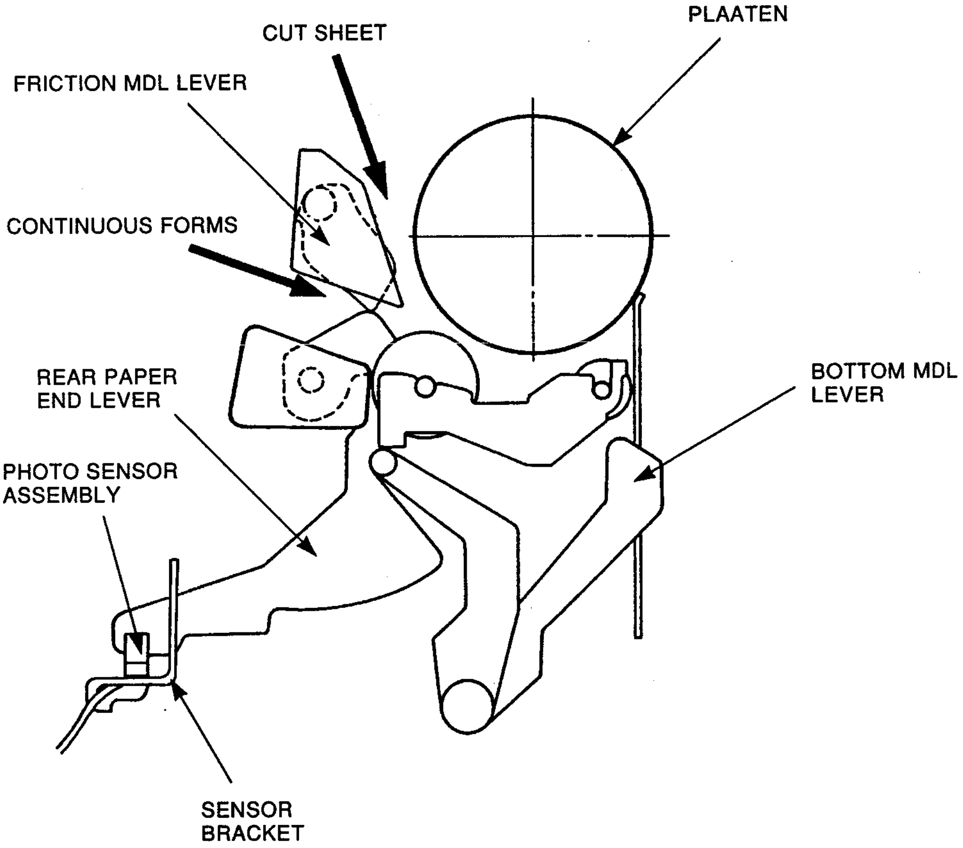

PLAATEN
CUT SHEET
FRICTION MDL LEVER
CONTINUOUS FORMS
REAR PAPER END LEVER
BOTTOM MDL LEVER
PHOTO SENSOR ASSEMBLY
SENSOR BRACKET

Figure 1-13 Paper-Out Detector Assembly

Ribbon Sensor Assembly

The ribbon sensor assembly senses:

- the kinds of installed ribbon (black nylon, black multistrike film, or color nylon).
- ribbon empty (multistrike film ribbon is installed).
- color homing error.

This assembly is located on the carrier, beside the print head, and consists of a color sensor and a MS switch (see Figure 1-14). Each sensor and switch is either on or off, depending on the situations shown in Table 1-5.

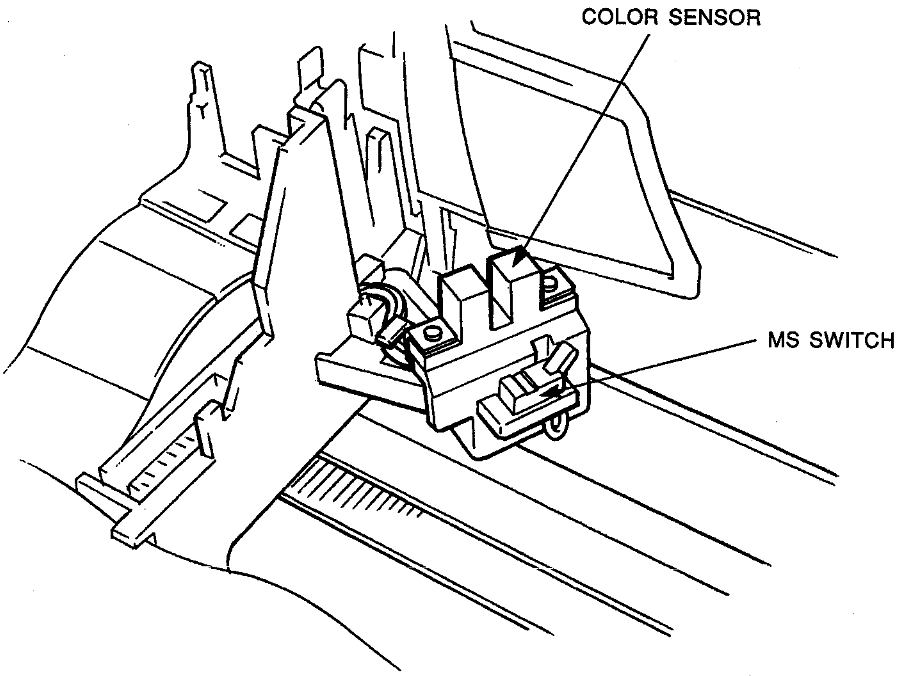


Figure 1-14 Ribbon Sensor Assembly

Table 1-5 Ribbon Situation

SIGNAL STATUS		**RIBBON SITUATION**
Color Sensor	**MS Switch**	
OFF	OFF	Black nylon ribbon is installed.
OFF	ON	Black multistrike film ribbon is empty.
ON	OFF	Color homing error.
ON	ON	Black multistrike film ribbon is installed.
ON/OFF	OFF	Color nylon ribbon is installed.

RIBBON CARTRIDGES

There are three types of ribbon cartridges for the Pinwriter.

- Black Nylon Ribbon Cartridge
- Black Multistrike Film Ribbon Cartridge
- Color Nylon Ribbon Cartridge

Black Nylon Ribbon Cartridge

This cartridge uses continuous loop, nylon fabric ribbon and it should be replaced when print quality becomes unsatisfactory (see Figure 1-15).

Black Multistrike Film Ribbon Cartridge

This cartridge uses carbon film ribbon, so it produces even sharper print quality than fabric ribbon cartridge (see Figure 1-16). This cartridge should be replaced when the ribbon is used up.

Color Nylon Ribbon Cartridge

This cartridge uses continuous loop, four-color nylon fabric ribbon, so it produces multicolor printing when the color ribbon base is installed (See Figure 1-17). It should be replaced when print quality becomes unsatisfactory.

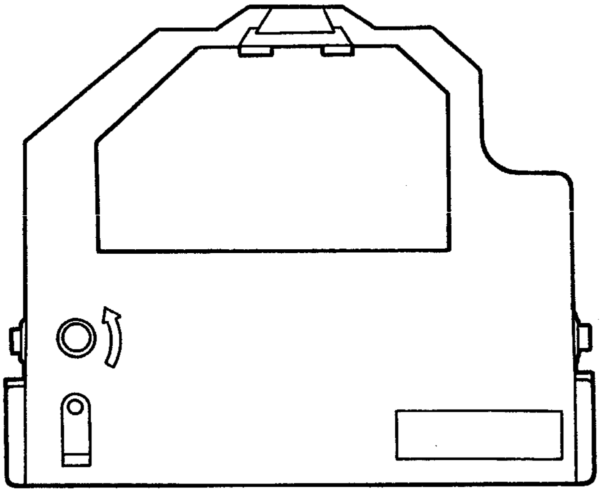


Figure 1-15 Black Nylon Ribbon Cartridge

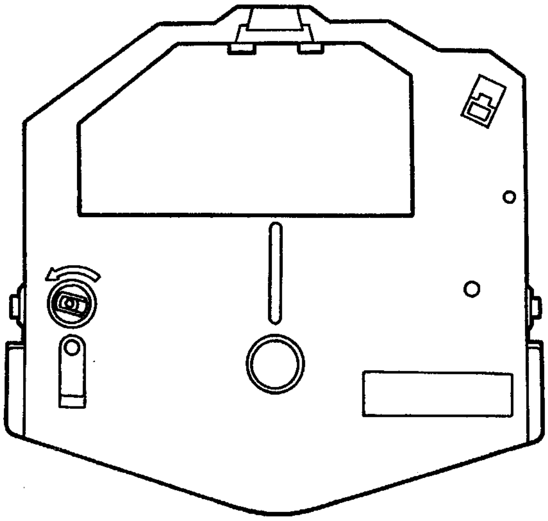


Figure 1-16 Black Multistrike Film Ribbon Cartridge

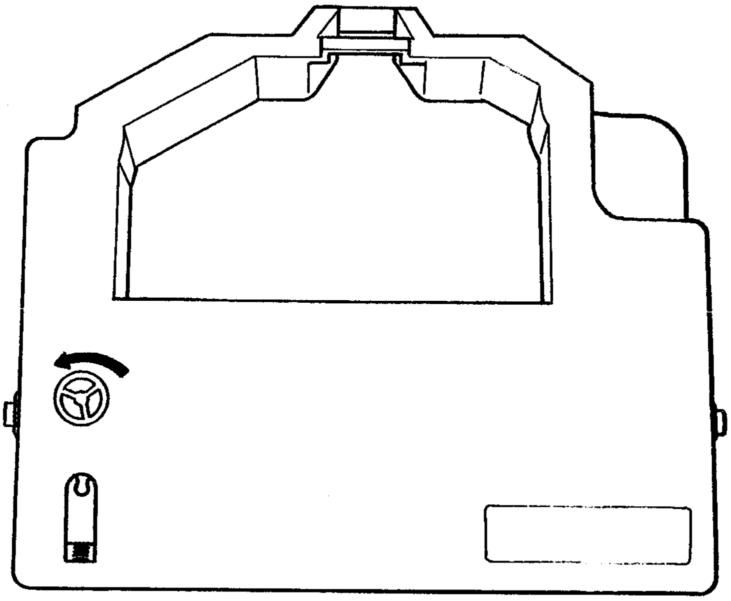


Figure 1-17 Color Nylon Ribbon Cartridge

CONTROL PANEL

The buttons and lights on the control panel allow you to control the printer, set print parameters, and monitor its status (see Figure 1-18). The PITCH indicators flash to aid in diagnosing printer malfunctions.

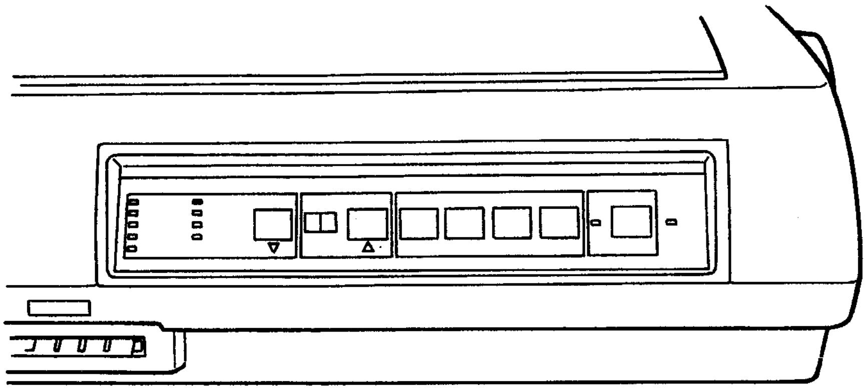


Figure 1-18 Control Panel

OPTIONAL FONT CARDS

Optional font cards can be inserted into the slot in the front of the printer (see Figure 1-19). Each font card has a capacity of 64 or 128 KB and can add an extra font to the printer.

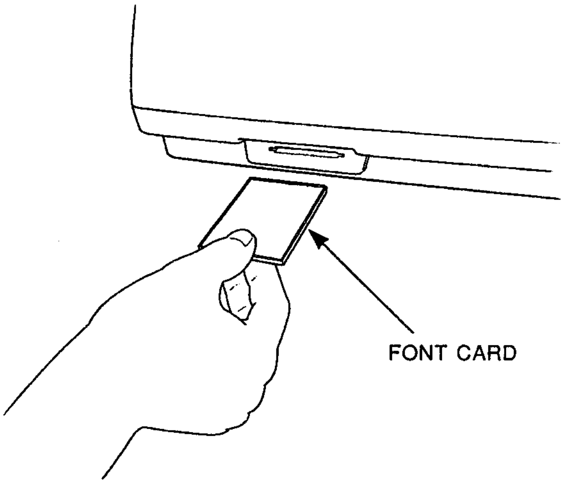


Figure 1-19 Font Card

OPTIONAL RS-232C INTERFACE

The optional RS-232C interface converts serial data of the RS-232C to parallel data used by the mother board (see Figure 1-20). The main components of the interface are

- µPD78C11G-251 MPU, which controls the operation of the RS-232C interface and stores the program,
- µPD4364C RAM, which stores received data (8 KB),
- pseudo-Centronics® interface, which transfers data to the mother board,
- DC-DC converter, which converts +5 V from the power supply to ±12 V to be used by the RS-232C interface driver.

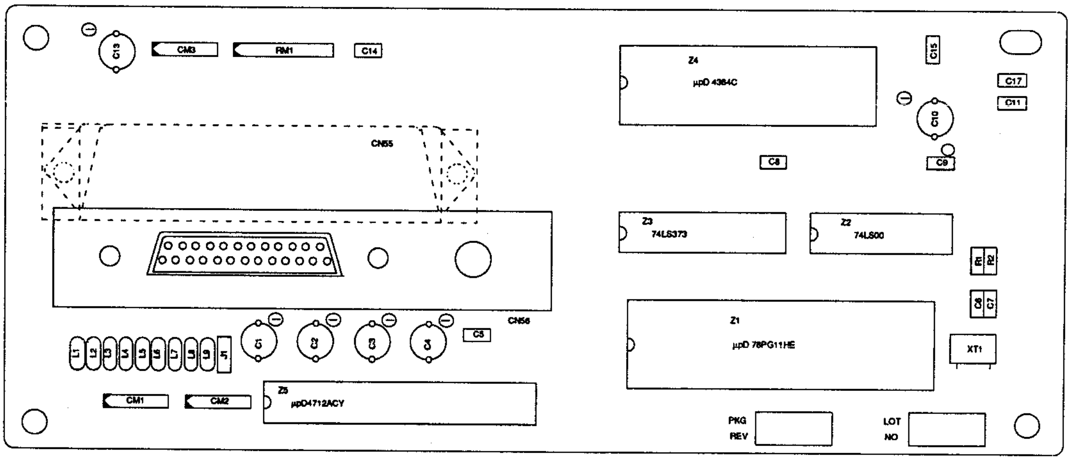

C13
CM3
RM1
C14
Z4
µPD 4364C
C15
C17
C11
C10
CN55
C8
C9
Z3
74LS373
Z2
74LS00
R1
R2
C6
C7
CN56
C5
Z1
µPD 78PG11HE
XT1
L1
L2
L3
L4
L5
L6
L7
L8
L9
J1
CM1
CM2
Z5
µPD4712ACY
PKG
REV
LOT
NO

Figure 1-20 RS-232C Interface Board

OPTIONAL COLOR KIT

The optional color kit enables the printer to produce multicolor printing (see Figure 1-21).

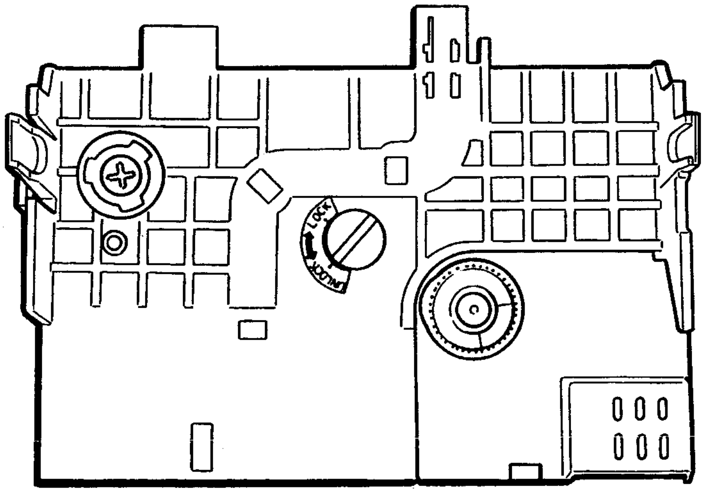


Figure 1-21 Color Ribbon Base

MEMORY SETTINGS

The memory settings are read by the printer at power-on. These settings can be changed by the operator. The Pinwriter responds to the following parameter settings.

- Print Mode Settings
- Form Settings
- Horizontal Settings
- Interface Settings

Table 1-6 gives the factory setting of each parameter.

Table 1-6 Factory Memory Settings

PARAMETER	SETTINGS
Print Mode Settings	
1. 12 cpi draft speed	High speed
2. Print style at power-up	Courier 10
3. Language character sets	USA
4. Character sets	IBM/Standard
5. Shape of zero	0
6. Graphics print direction	Unidirection
7. Download character sets	128 characters x 2
8. Heavy duty check	On
9. Quiet mode	Off
Form Settings	
1. Form length	
In lines of 6 lpi	66
In inches	11
2. Skip-over perforation	Off
3. Lines per inch	6 lpi
4. CR function	CR only
5. LF function	CR + LF
6. Buffer full auto line feed	On
7. Load/tear off	1 inch
8. Auto tear off	disable
9. Pull tractor mode	Off
10. Sheet Feeder Option type*	1 bin
Horizontal Settings	
1. Left margin column	1
2. Horizontal alignment LQ	5
3. Horizontal alignment DR	5
4. Carrier stop position	Normal
5. Sheet feeder left margin*	Column 1
Interface Settings	
1. Buffer capacity	80 KB
2. 7 or 8 bit data	8 bit
3. DC1/DC3	Disable
4. Baud rate	9600
5. Word length	8 bit
6. Parity check	None
7. DCD. CTS. DSR signals	Checked
8. Communication protocol	X-on/X-off
9. Ready/busy control	Pin 19, 20
10. Ready polarity	High
11. Emuration**	Pinwriter

* This item is printed only with P6300/P70.

** This item is printed only if an emulation card is installed.

Entering the Memory Switch Menu Mode

To enter the memory set mode, follow these steps.

1. Load the continuous forms paper into the printer.
2. Press the **SELECT** button to place the printer offline.
3. Press the **MENU** button.

The printer will enter the memory switch menu mode and print out the main menu (see Figure 1-22).

```
     MAIN MENU

   1. PRINT MODE SETTINGS
   2. FORM SETTINGS
   3. HORIZONTAL SETTINGS
   4. INTERFACE SETTINGS
   5. PRINT ALL CURRENT SETTINGS

   6. TEST PRINT
   7. HEX DUMP

  PLEASE ENTER NO. ?

  "PITCH" button increases display value
  "TYPE STYLE" button decreases display value
  "SELECT" button enters selection no.
  "MENU" button SAVE & EXIT
```

Figure 1-22 Printer Main Menu

Changing the Memory Settings

To change any of the parameters, you will interact with the printer and respond to questions that are printed out.

The control panel is used to respond to the questions that appear at the end of the printout. Each button function in the memory set mode is described below.

- **PITCH** button – Press to increase the menu number.
- **TYPE STYLE** button – Press to decrease the menu number.
- **SELECT** button – Press to enter the selected parameter.
- **MENU** button – Press to save settings and quit menu mode.

Memory Switch Description

This section describes all memory switch settings.

NOTE

- Items or function indicated with asterisk is the factory setting.
- Never change RFU switch settings.
- Most of undefined settings represent that the respective switches are off. Avoid use of undefined settings since they may be used for additional functions in the future.
- Default of character set varies from that of conventional Pinwriters.
- $\overline{\text{SELECT IN}}$ and $\overline{\text{AUTO FEED XT}}$ signals cannot be controlled.
- Download characters cannot be used unless receive buffer capacity is set to 48KB.
- "#" represents a function in the memory set, which is released to users.
- MSW configuration is determined based on model P8300.
- Description on memory set n-m:

  Indicates that settings can be conducted in memory set mode. Be careful since all items are not necessary be set.

  n : 1. Print Mode Settings
  2. Forms Settings
  3. Horizontal Settings
  4. Interface Settings

  m : Item number of each settings.

- When special assignment is entered, [ ] is not printed.
- MSWn-m

  m: b7=1, .. b0=8

(MSW1-1)

#(MSW1-2) Power up default: Select/Deselect

SELECT/DESELECT AT POWER UP	**MSW1-2**		
Deselect	1	ON	
Select	0	OFF	*

#(MSW1-3) Receive buffer capacity

RECEIVE BUFFER CAPACITY	**MSW1-3**		
80K bytes (NO DL)	1	ON	*
48K bytes	0	OFF	

Memory set 4-1

Download characters cannot be used unless the setting is 48K.

#(MSW1-4) 7 or 8 bit data

SWITCHING OF 7/8 bit	**MSW1-4**		
7-bit data	1	ON	
8-bit data	0	OFF	*

Memory set 4-2

#(MSW1-5) Default of printing direction dot mode

DEFAULT OF DOT MODE PRINTING DIRECTION	**MSW1-5**		
Undirectional	1	ON	
Bidirectional	0	OFF	*

Memory set 1-6

(MSW1-6) RFU

#(MSW1-7) Number of download characters

NUMBER OF DOWNLOAD CHARACTERS	MSW1-7		
256 characters	1	ON	
128 characters	0	OFF	*

Memory set 1-7

#(MSW1-8) Left margin position for printer with sheet feeder

LEFT MARGIN FOR PRINTER WITH S/F	MSW1-8		
35th column	1	ON	
1st column	0	OFF	*

Memory set 3-5

#(MSW2-1, 2-2) Line spacing default

LINE SPACING DEFAULT	MSW 2		
	1	2	
1/6"	1	0	
1/8"	0	0	*
1/3"	1	1	
1/4"	1	1	

Memory set 2-3

#(MSW2-3) Skip over perforation

SKIP OVER PERFORATION	MSW2-3		
With 1" skip	1	ON	
Without 1" skip	0	OFF	*

Memory set 2-2

W(MSW2-4) Buffer full auto line feed

BUFFER FULL AUTO LINE FEED	**MSW2-4**		
Carriage return (CR)	1	ON	
Carriage return (CR) + line feed (LF)	0	OFF	*

Memory set 2-6

#(MSW2-5) LF function

LF FUNCTION	**MSW2-5**		
Line feed (LF)	1	ON	
Carriage return (CR) + line feed (LF)	0	OFF	*

Memory set 2-5

#(MSW2-6) CR function

CR FUNCTION	**MSW2-6**		
Carriage return (CR) + line feed (LF)	1	ON	
Carriage return (CR)	0	OFF	*

Memory set 2-4

#(MSW2-7) Carriage stop position

CARRIAGE STOP POSITION	**MSW2-7**		
Left margin position	1	ON	
Normal	0	OFF	*

Memory set 3-4

#(MSW2-8) Centering position

CENTERING POSITION	MSW2-8		
0th column	1	ON	
70th/42nd column	0	OFF	*

#(MSW3-1 to 3-5) Language character sets

LANGUAGE CHARACTER SETS	MSW 3					
	1	2	3	4	5	
USA – U. S. A	0	0	0	0	0	*
FRA – FRANCE	1	0	0	0	0	
GER – GERMANY	0	1	0	0	0	
NG – ENGLAND	1	1	0	0	0	
DM1 – DENMARK-1	0	0	1	0	0	
SWD – SWEDEN	1	0	1	0	0	
ITL – ITALY	0	1	1	0	0	
SPA – SPAIN	1	1	1	0	0	
JPN – JAPAN	0	0	0	1	0	
NOR – NORWAY	1	0	0	1	0	
DM2 – DENMARK-2	0	1	0	1	0	
NET – NETHERLANDS	1	1	0	1	0	
TUK – TURKEY	0	0	1	1	0	
SP2 – SPAIN-2	1	0	1	1	0	
L. A. – LATIN AMERICA	0	1	1	1	0	
R. F. U	1	1	1	1	0	
MULTILINGUAL	0	0	0	0	1	
PORTUGAL	1	0	0	0	1	
CANADA-FRENCH	0	1	0	0	1	
NORWAY-2	1	1	0	0	1	
R. F. U	0	0	1	0	1	
	1	1	1	1	1	

Memory set 1-3

* Thai language can be selected only when THAI FONT is installed.

LANGUAGE CHARACTER SETS (THAI)	MSW 3				
	1	2	3	4	5
TH1 THAI 1	0	1	1	1	0
TH2 THAI 2	1	1	1	1	0

#(MSW3-6) Shape of zero

SHAPE OF ZERO	MSW3-6		
With slash	1	ON	
Without slash	0	OFF	*

Memory set 1-5

#(MSW3-7, 3-8) Load/tear-off function

LOAD/TEAR-OFF FUNCTION	MSW3		
	7	8	
1 INCH	0	0	*
0 MGN EMLTN	0	1	
SHORT ADJ	1	0	
R. F. U	1	1	

Memory set 2-7

(MSW4-1) 80 or 136 columns

80 OR 136 COLUMN SWITCHING	MSW4-1	
80 columns	1	ON
136 columns	0	OFF

#(MSW4-2) Auto tear off function

AUTO TEAR OFF FUNCTION	MSW4-2		
Enable	1	ON	
Disable	0	OFF	*

Memory set 2-8

#(MSW4-3) Pull tractor mode

PULL TRACTOR MODE	MSW4-3		
Pull tractor	1	ON	
Normal	0	OFF	*

Memory set 2-9

#(MSW4-4) Sheet feeder mode

S/F MODE	MSW4-4		
2Bin S/F	1	ON	
1Bin S/F	0	OFF	*

Memory set 2-10

#(MSW4-5) Quiet mode

QUIET MODE	MSW4-5		
Quiet mode	1	ON	
Normal mode	0	OFF	*

Memory set 1-9

#(MSW4-6) Draft 12 font type

DRAFT 12 FONT TYPE	MSW4-6		
Draft 12	1	ON	
Draft 12 HS	0	OFF	*

Memory set 1-1

#(MSW4-7) Character set select

CHARACTER SET SWITCHING	**MSW4-7**		
IBM(R)/STD	1	ON	*
Italic	0	OFF	

Memory set 1-4

#(MSW4-8) DC1/DC3 code

DC1/DC3 CODE	**MSW4-8**		
Enable	1	ON	
Disable	0	OFF	*

Memory set 4-3

#(MSW5-1 to 5-3) Baud rate (communication speed)

BAUD RATE	**MSW 5**			
	1	**2**	**3**	
150 bps	1	0	1	
300 bps	1	1	0	
600 bps	1	1	1	
1200 bps	0	0	0	
2400 bps	0	0	1	
4800 bps	0	1	0	
9600 bps	0	1	1	*
19200 bps	1	0	0	

Memory set 4-4

#(MSW5-4) Word length

WORD LENGTH	**MSW5-4**		
7 bits	1	ON	
8 bits	0	OFF	*

Memory set 4-5

#(MSW5-5, 5-6) Parity check

PARITY	**MSW 5**		
	5	**6**	
None (No parity check)	0	0	*
Odd	1	0	
Even	1	1	
R. F. U	0	1	

Memory set 4-6

#(MSW5-7) SCA DTR

SCA → DTR	**MSW5-7**		
Does not output	1	ON	
Output (DTR=SCA)	0	OFF	*

Memory set 4-9

(MSW5-8) Communication test

COMMUNICATION TEST (RFU)	**MSW5-8**		
Communication test	1	ON	
Normal	0	OFF	*

#(MSW6-1) DSR, CTS, DCD signal check

DSR, CTS, DCD SIGNAL CHECK	**MSW6-1**		
Without check (regarded as normally on)	1	ON	
With check	0	OFF	*

Memory set 4-7

(MSW6-2) RFU

(MSW6-3) Break signal check

BREAK SIGNAL CHECK	**MSW6-3**		
Does not output	1	ON	*
Output	0	OFF	

Since many personal computers cannot process BREAK signal, it is not output.

#(MSW6-4) SCA (reverse channel) polarity switching

SCA POLARITY SWITCHING	MSW6-4		
Negative (NOT BUSY = –12V)	1	ON	
Positive (NOT BUSY = +12V)	0	OFF	*

Memory set 4-10

#(MSW6-5, 6-6) Communication protocol

COMMUNICATION PROTOCOL	MSW6		
	5	6	
X-ON/X-OFF	0	0	*
ETX/ACK	1	0	
X-ON/X-OFF repetition	0	1	
R. F. U	1	1	

Memory set 4-8

#(MSW6-7, 6-8) Recieve buffer busy timing

RECEIVE BUFFER BUSY TIMING	MSW6		
	7	8	
152 bytes	0	0	
288 bytes	0	1	
560 bytes	1	0	
8056 bytes	1	1	*

#(MSW7-1 to 7-4) Font style selection

FONT STYLE SELECTION	**MSW 7**				
	1	**2**	**3**	**4**	
Courier	0	0	0	0	*
Prestige Elite	1	0	0	0	
ITC Survenir	0	1	0	0	
Bold PS	1	1	0	0	
Times PS	0	0	1	0	
Helvetica PS	1	0	1	0	
Quick Gothic	0	1	1	0	
Draft Gothic	1	1	1	0	
Option Font 1	0	0	0	1	
2	1	0	0	1	
3	0	1	0	1	
4	1	1	0	1	
R. F. U	0	0	1	1	
	1	1	1	1	

Memory set 1-2

#(MSW7-5 to 7-8) Pitch selection

FONT PITCH SETTING	**MSW 7**				
	5	**6**	**7**	**8**	
10 cpi	0	0	0	0	*
12 cpi	1	0	0	0	
15 cpi	0	1	0	0	
17 cpi	1	1	0	0	
20 cpi	0	0	1	0	
R. F. U	1	0	1	0	
	1	1	1	1	

Memory set 1-2

#(MSW8-1) Heavy duty check

HEAVY DUTY CHECK	**MSW8-1**		
Without check	1	ON	
With check	0	OFF	*

Memory set 1-8

(MSW8-2) Use prohibited
Used for special functions at PSA Rev. 09.02.

TEAR OFF POSITION CHANGE	**MSW8-2**		
Last printing line	1	ON	
Perforation	0	OFF	*

(MSW8-3) Switching of emulation card

EMULATION	**MSW8-3**		
Emulation card	1	ON	
Pinwriter	0	OFF	*

Memory set 4-11
Effective when emulation card is installed.

(MSW8-4) CR code function

CR CODE FUNCTION	**MSW8-4**		
CR code only moves to LM position	1	ON	
According to MSW2-6	0	OFF	*

Memory set 2-4
(MSW8-5 to 8-8) RFU

#(MSW9-1 to 9-4) Horizontal alignment LQ

HORIZONTAL ALIGNMENT LQ	**MSW 9**				
	1	**2**	**3**	**4**	
0: F/W set value	0	0	0	0	*
+1/360" 0.07 mm	1	0	0	0	
+2/360" 0.14 mm	0	1	0	0	
+3/360" 0.21 mm	1	1	0	0	
+4/360" 0.28 mm	0	0	1	0	
Undefined					
-4/360" 0.28 mm	0	0	1	1	
-3/360" 0.21 mm	1	0	1	1	
-2/360" 0.14 mm	0	1	1	1	
-1/360" 0.07 mm	1	1	1	1	

Memory set 3-2

#(MSW9-5 to 9-8) Horizontal alignment DR

HORIZONTAL ALIGNMENT	MSW 9				
	5	**6**	**7**	**8**	
0: F/W set value	0	0	0	0	*
+1/360" 0.07 mm	1	0	0	0	
+2/360" 0.14 mm	0	1	0	0	
+3/360" 0.21 mm	1	1	0	0	
+4/360" 0.28 mm	0	0	1	0	
Undefined					
-4/360" 0.28 mm	0	0	1	1	
-3/360" 0.21 mm	1	0	1	1	
-2/360" 0.14 mm	0	1	1	1	
-1/360" 0.07 mm	1	1	1	1	

Memory set 3-3

(MSW10-1) Validity of SELECT IN signal

SELECT IN	MSW10-1		
Effective*	1	ON	
According to MSW4-8	0	OFF	*

Note: Fixed to low in H/W. Can be changed by pattern cut.

(MSW10-2) Validity of AUTO FEED XT signal

AUTO FEED XT	MSW10-2		
Fixed to low	1	ON	
Effective	0	OFF	*

(MSW10-3) Test print mode switching

TEST PRINT MODE SWITCHING	MSW10-3		
Manual	1	ON	
Auto	0	OFF	*

In manual mode, pressing SELECT button halts test printing. Print mode is not changed until it changed using TYPE STYLE or PITCH button.

(MSW10-4) Homing disable/enable (for PCB aging)

HOMING PROHIBITED	**MSW10-4**		
Disable	1	ON	
Enable	0	OFF	*

(MSW10-5) Aging mode

AGING MODE	**MSW10-5**		
Enable	1	ON	
Disable	0	OFF	*

(MSW10-6) RFU

(MSW10-7) Thai font mode

THAI FONT MODE	**MSW10-7**		
Thai font mode	1	ON	
Normal font mode	0	OFF	*

* Effective when THAI FONT is installed.

(MSW10-8) RFU

(MSW11-1 to 11-8)
One byte specifies PTR backlash (1/720").

00H*

(MSW12-1 to 12-8) RFU

(MSW13-1 to 13-8) RFU

(MSW14-1 to 14-8, MSW15-1 to 15-8)

The sheet feeder loading position is specified (1/720").

00H*

(MSW16-1 to 16-8) Print compensation (plant setting): LQ mode

PRINT COMPENSATION (plant setting)	**MSW 16**							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
No compensation	0	0	0	0	0	0	0	0
+1/360" 0.07 mm	1	0	0	0	0	0	0	0
+2/360" 0.14 mm	0	1	0	0	0	0	0	0
+3/360" 0.21 mm	1	1	0	0	0	0	0	0
+4/360" 0.28 mm	0	0	1	0	0	0	0	0
+5/360" 0.35 mm	1	0	1	0	0	0	0	0
+6/360" 0.42 mm	0	1	1	0	0	0	0	0
+7/360" 0.49 mm	1	1	1	0	0	0	0	0
Undefined								
-7/360" 0.49 mm	1	0	0	1	1	1	1	1
-6/360" 0.42 mm	0	1	0	1	1	1	1	1
-5/360" 0.35 mm	1	1	0	1	1	1	1	1
-4/360" 0.28 mm	0	0	1	1	1	1	1	1
-3/360" 0.21 mm	1	0	1	1	1	1	1	1
-2/360" 0.14 mm	0	1	1	1	1	1	1	1
-1/360" 0.07 mm	1	1	1	1	1	1	1	1

(MSW17-1 to 17-8) RFU

#(MSW18-1 to 18-8, MSW19-1 to 19-8) FF length

Two bytes data specify the FF length (1/720").

```
1E  F0  H*
|   |                    1...8
|   └── MSW18-1 to 18-8  b7  b0
└────── MSW19-1 to 19-8
```

Memory set 2-1

(MSW20-1 to 20-8) Print compensation (plant setting): HS-LQ, Draft 12/15/17/20, 1/80" dot mode

PRINT COMPENSATION (plant setting)	**MSW 20**							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
No compensation	0	0	0	0	0	0	0	0
+1/360" 0.07 mm	1	0	0	0	0	0	0	0
+2/360" 0.14 mm	0	1	0	0	0	0	0	0
+3/360" 0.21 mm	1	1	0	0	0	0	0	0
+4/360" 0.28 mm	0	0	1	0	0	0	0	0
+5/360" 0.35 mm	1	0	1	0	0	0	0	0
+6/360" 0.42 mm	0	1	1	0	0	0	0	0
+7/360" 0.49 mm	1	1	1	0	0	0	0	0
Undefined								
-7/360" 0.49 mm	1	0	0	1	1	1	1	1
-6/360" 0.42 mm	0	1	0	1	1	1	1	1
-5/360" 0.35 mm	1	1	0	1	1	1	1	1
-4/360" 0.28 mm	0	0	1	1	1	1	1	1
-3/360" 0.21 mm	1	0	1	1	1	1	1	1
-2/360" 0.14 mm	0	1	1	1	1	1	1	1
-1/360" 0.07 mm	1	1	1	1	1	1	1	1

(MSW21-1 to 21-8) Print compensation (plant setting): Draft 10, HS-12

PRINT COMPENSATION (plant setting)	**MSW 21**							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
No compensation	0	0	0	0	0	0	0	0
+1/360" 0.07 mm	1	0	0	0	0	0	0	0
+2/360" 0.14 mm	0	1	0	0	0	0	0	0
+3/360" 0.21 mm	1	1	0	0	0	0	0	0
+4/360" 0.28 mm	0	0	1	0	0	0	0	0
+5/360" 0.35 mm	1	0	1	0	0	0	0	0
+6/360" 0.42 mm	0	1	1	0	0	0	0	0
+7/360" 0.49 mm	1	1	1	0	0	0	0	0
Undefined								
-7/360" 0.49 mm	1	0	0	1	1	1	1	1
-6/360" 0.42 mm	0	1	0	1	1	1	1	1
-5/360" 0.35 mm	1	1	0	1	1	1	1	1
-4/360" 0.28 mm	0	0	1	1	1	1	1	1
-3/360" 0.21 mm	1	0	1	1	1	1	1	1
-2/360" 0.14 mm	0	1	1	1	1	1	1	1
-1/360" 0.07 mm	1	1	1	1	1	1	1	1

#(MSW22-1 to 22-8) Left margin

LM distance is specified by 2-byte data (1/2880").

```
00 00 H*                     1...8
 |  └──── MSW22-1 to 22-8   b7 b0
 └─────── MSW23-1 to 23-8
```

Memory set 3-1

(MSW24-1 to 24-8, MSW25-1 to 25-8) Load position

Load position is specified by 2-byte data (1/720").

```
00 00 H*                     1...8
 |  └──── MSW24-1 to 24-8   b7 b0
 └─────── MSW25-1 to 25-8
```

(MSW26-1 to 26-8, MSW27-1 to 27-8) Tear off position

Tear off position is specified by 2-byte data (1/720").

```
00 00 H*                     1...8
 |  └──── MSW26-1 to 26-8   b7 b0
 └─────── MSW27-1 to 27-8
```

Maintenance Function

Information contained in this section shall not be released to users without prior consultation with technical staff members.

EEPROM

Secret Mode

This function is used to use special functions which cannot be set by the menu mode by changing memory switch data in bit unit.

(1) Entering into secret mode

To enter into the secret mode, turn power on while depressing **FEED, TEAR PAPER, LOAD/UNLOAD** and **MENU** buttons, then press **MENU** then **SELECT** buttons.

* The interface connector should be disconnected when entering into the secret mode. Otherwise, unexpected data may be transmitted and contents of the EEPROM may be damaged.

Example printout:

```
FW REV.XX
CG REV.XX
ERROR : XX XX
MEMORY SWITCH SETTINGS
S 1 xxxxxxxx  S 2 xxxxxxxx  S 3 xxxxxxxx
S 5 xxxxxxxx  S 6 xxxxxxxx  S 7 xxxxxxxx
```

1st line: FW Rev. number
2nd line: CG Rev. number
3rd line: Error history
4th line and after: Memory switch contents

After the above, MAIN MENU is printed.

```
99. EXIT
0. RESET TO FACTORY SETTING
1 -- 27.CHANGE MSW X-Y
```

(2) Setting procedure

Select a number, 99, 0, or 1 to 27 using NEXT or PREV. button then press ENTER button to enter the selected function (switch functions are the same as memory setting).

1. 99. EXIT
   The updated settings are stored in the EEPROM memory and control returns to the on-line mode.
2. 0.RESET TO FACTORY SETTING
   Factory settings are stored in the EEPROM memory and control returns to MAIN MENU (80/130 columns are not changed).
3. 1 -- 27. CHANGE MSW X-Y
   The control proceeds to setting of the selected memory switch.
4. Setting of memory switch X
   The following message is printed out and control waits for data input.

```
S 1 - 1 0
  |   | └──────── CURRENT SETTING  0:  OFF
  |   └─────────  SUB SWITCH NO.   1:  ON
  └───────────── SWITCH NO.
```

When settings are to be changed, select the desired number using NEXT and/or PREV. buttons and press ENTER button. When data are entered, results are printed out on the right side. If no change is specified, control proceeds to the next bit without printing.

```
S 1 - 1 0 1

S 1 - 2 0
```

When sub-switch 8 is processed, control returns automatically to MAIN MENU.

```
99.    EXIT
0.     RESET TO FACTORY SETTING
1--27.CHANGE MSW X-Y
```

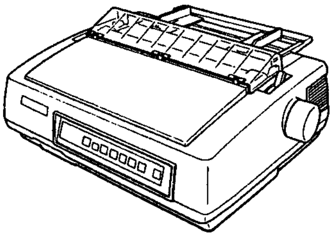
CAUTION

If wrong settings are entered, the printer may not be usable thereafter. Operate after through understanding of switch functions.

* Even if memory switch 4-1 (136/80 columns) is changed midway, the model name printed out in test print does not changed. If you want to change the model name, contact your NEC headquater.

Section 2

Troubleshooting



Pinwriter printers are highly reliable and virtually trouble-free. However, if a problem occurs, use the information in this section to identify the malfunction.

GENERAL TROUBLESHOOTING PROCEDURES

To perfrom the troubleshooting generally, you can use the following features.

- Error Codes
- Status Codes
- Self-Test
- Print Screen
- Hex Dump
- Control Panel
- Special Feature
- Test Points

The subsequent flowcharts offer solutions to specific Pinwriter problems. Try each solution, in the order listed, until the problem is solved.

Error Codes

The PITCH indicator on the printer's control panel displays error codes to help diagnose printer malfunctions. The error codes are divided into three groups. "dx" indicates an error in the RS-232C interface, "Ex" indicates an error in the electronic circuit, and "Ax" indicates an error in the mechanical assembly. Tables 2-1 through 2-3 give the values of x and the corresponding definition for each type of error. **PITCH** indicator flashes, and **SELECT** lamp off, if one of them occurs. Electronic circuit diagnostics is done once at power up. If powered up with **PITCH** and **TYPE STYLE** button holded, printer continues this diagnostics until power off.

Figure 2-1 shows the order of the error codes displayed on the **PITCH** indicator.

Table 2-1 RS-232C Interface Errors (dx)

VALUE OF X	ERROR DEFINITION
0	Timer check error in RS-232C CPU
1	Check sum error for RS-232C firmware ROM
2	RAM check error for 8K receive buffer
7	Check sum error for TAIWAN board firmware ROM
A	RS-232C option error (hardware)
b	Communication error between RS-232C option and printer

Table 2-2 Electronic Circuit Errors (Ex)

VALUE OF X	ERROR DEFINITION
0	Check sum error for master firmware ROM
3	Check sum error for resident CG ROM
4	RAM check error used for CPU
8	Check sum error for ROM of font card
9	Check sum error for ROM of emulation card
b	Emulation card pulled out while power is on
E	EEPROM check error

Table 2-3 Mechanical Assembly Errors (Ax)

VALUE OF X	ERROR DEFINITION
0	Carrier movement error during printing
3	Color ribbon homing error/color change error
4	Carrier homing error
9	Sheet feeder paper eject error at power on

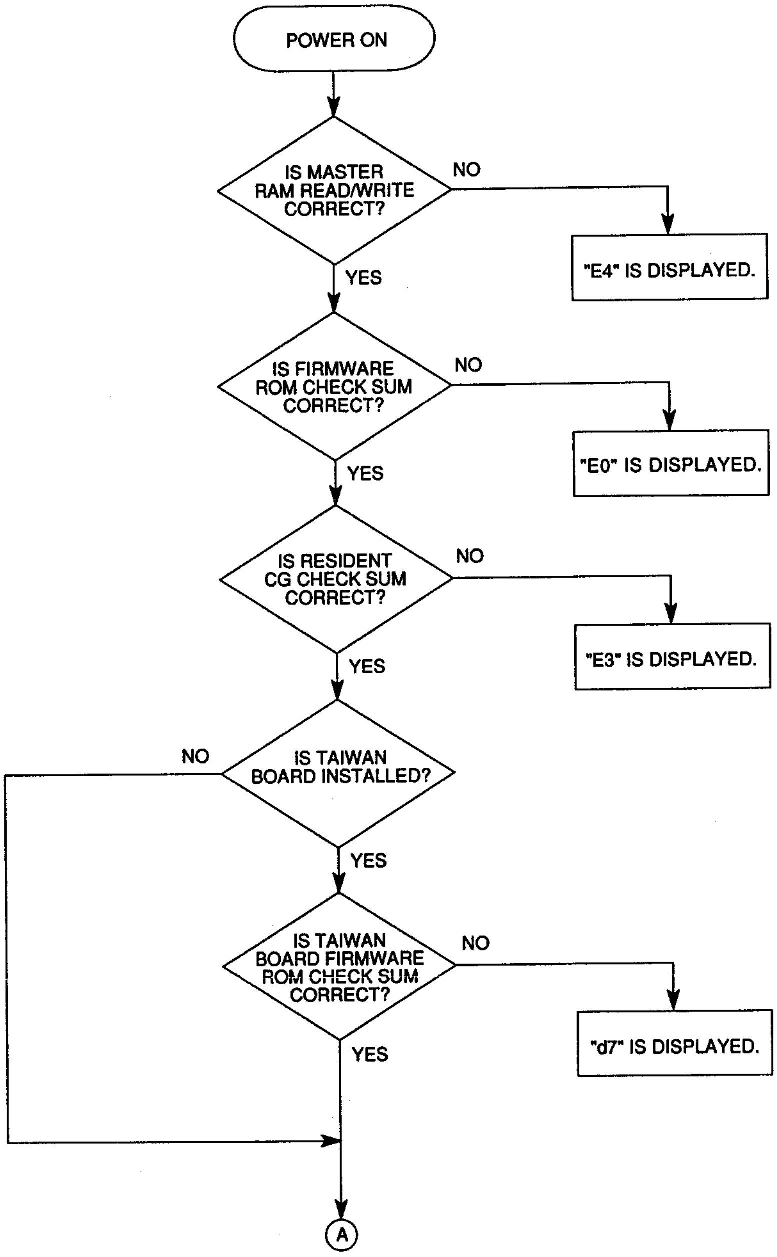

POWER ON
IS MASTER RAM READ/WRITE CORRECT?
NO
"E4" IS DISPLAYED.
YES
IS FIRMWARE ROM CHECK SUM CORRECT?
NO
"E0" IS DISPLAYED.
YES
IS RESIDENT CG CHECK SUM CORRECT?
NO
"E3" IS DISPLAYED.
YES
NO
IS TAIWAN BOARD INSTALLED?
YES
IS TAIWAN BOARD FIRMWARE ROM CHECK SUM CORRECT?
NO
"d7" IS DISPLAYED.
YES
A

Figure 2-1 Error Codes (1/4)

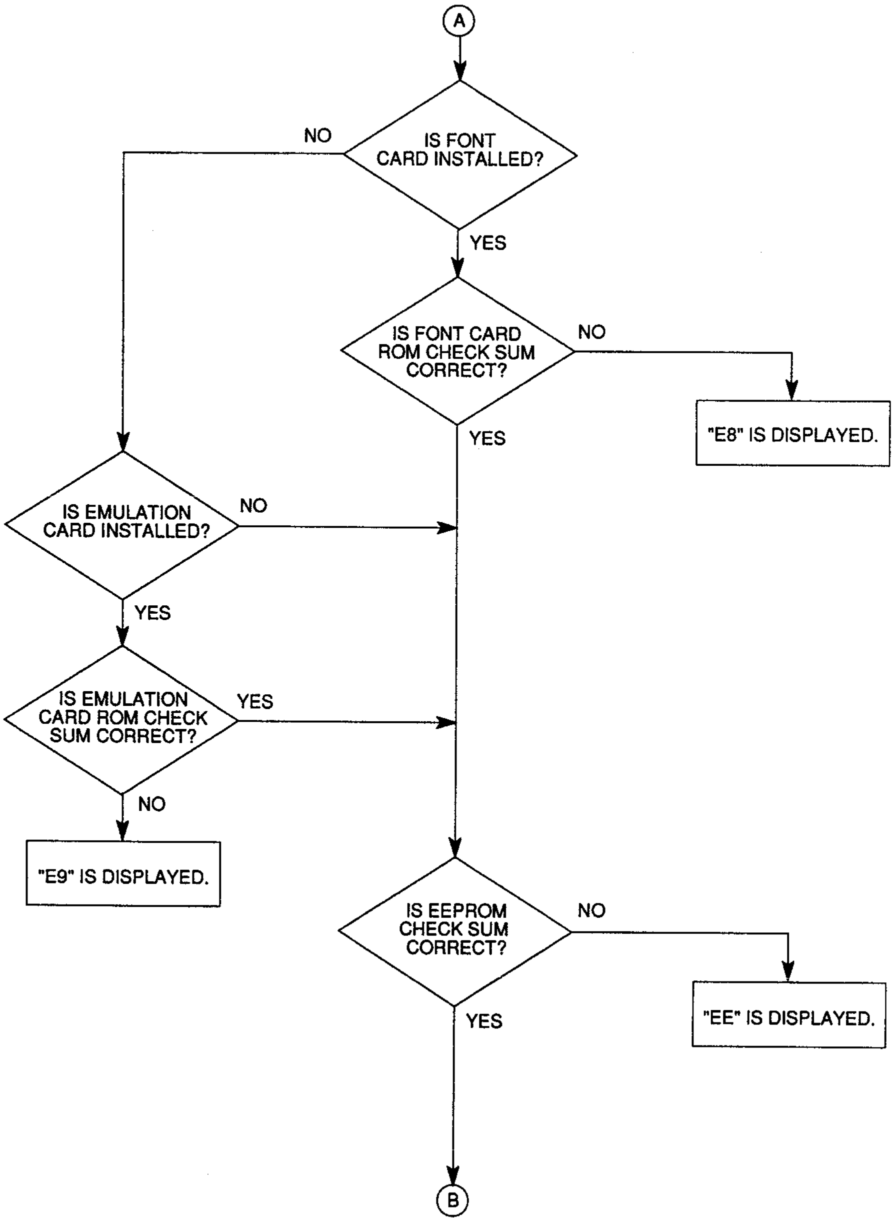

A
IS FONT CARD INSTALLED?
NO
YES
IS FONT CARD ROM CHECK SUM CORRECT?
NO
"E8" IS DISPLAYED.
YES
IS EMULATION CARD INSTALLED?
NO
YES
IS EMULATION CARD ROM CHECK SUM CORRECT?
YES
NO
"E9" IS DISPLAYED.
IS EEPROM CHECK SUM CORRECT?
NO
"EE" IS DISPLAYED.
YES
B

Figure 2-1 Error Codes (2/4)

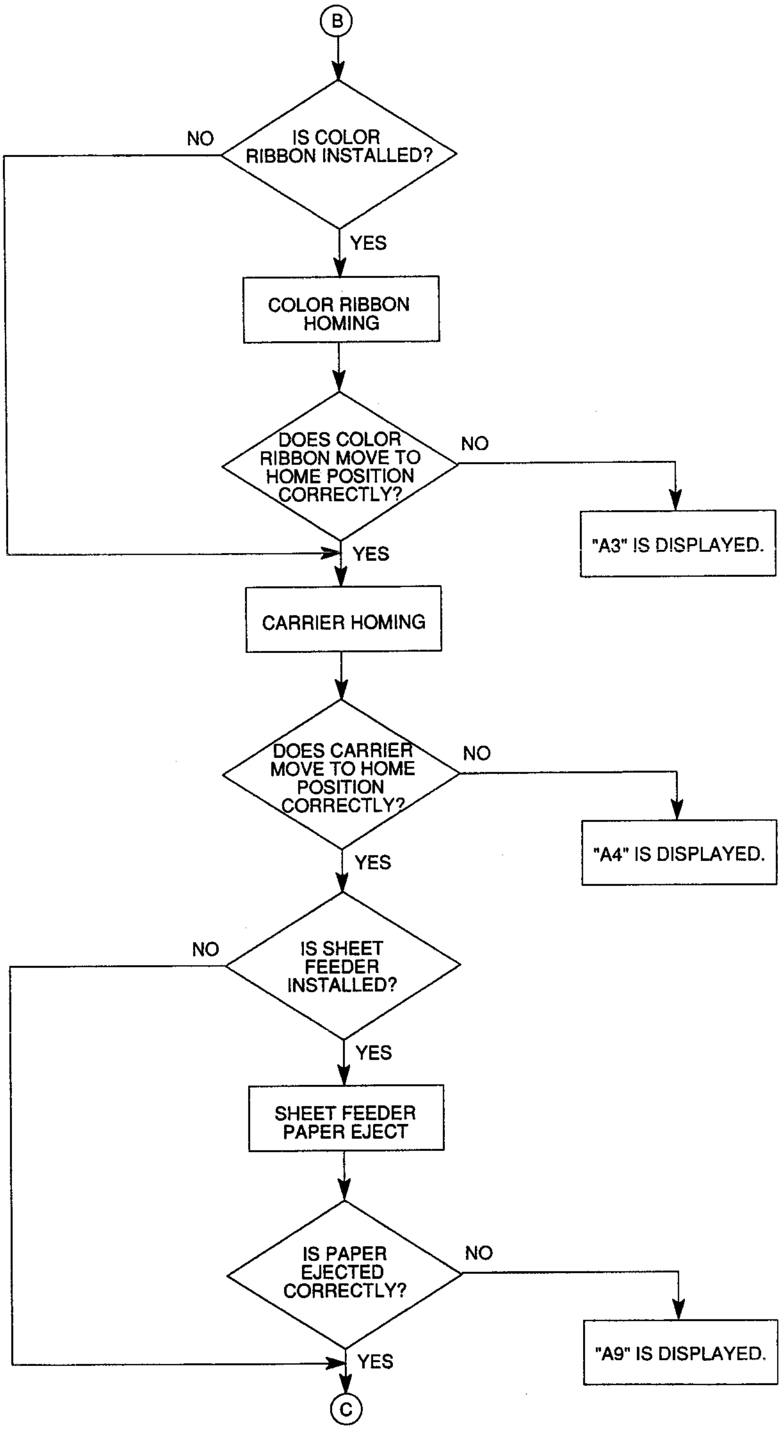

B
IS COLOR RIBBON INSTALLED?
NO
YES
COLOR RIBBON HOMING
DOES COLOR RIBBON MOVE TO HOME POSITION CORRECTLY?
NO
"A3" IS DISPLAYED.
YES
CARRIER HOMING
DOES CARRIER MOVE TO HOME POSITION CORRECTLY?
NO
"A4" IS DISPLAYED.
YES
IS SHEET FEEDER INSTALLED?
NO
YES
SHEET FEEDER PAPER EJECT
IS PAPER EJECTED CORRECTLY?
NO
"A9" IS DISPLAYED.
YES
C

Figure 2-1 Error Codes (3/4)

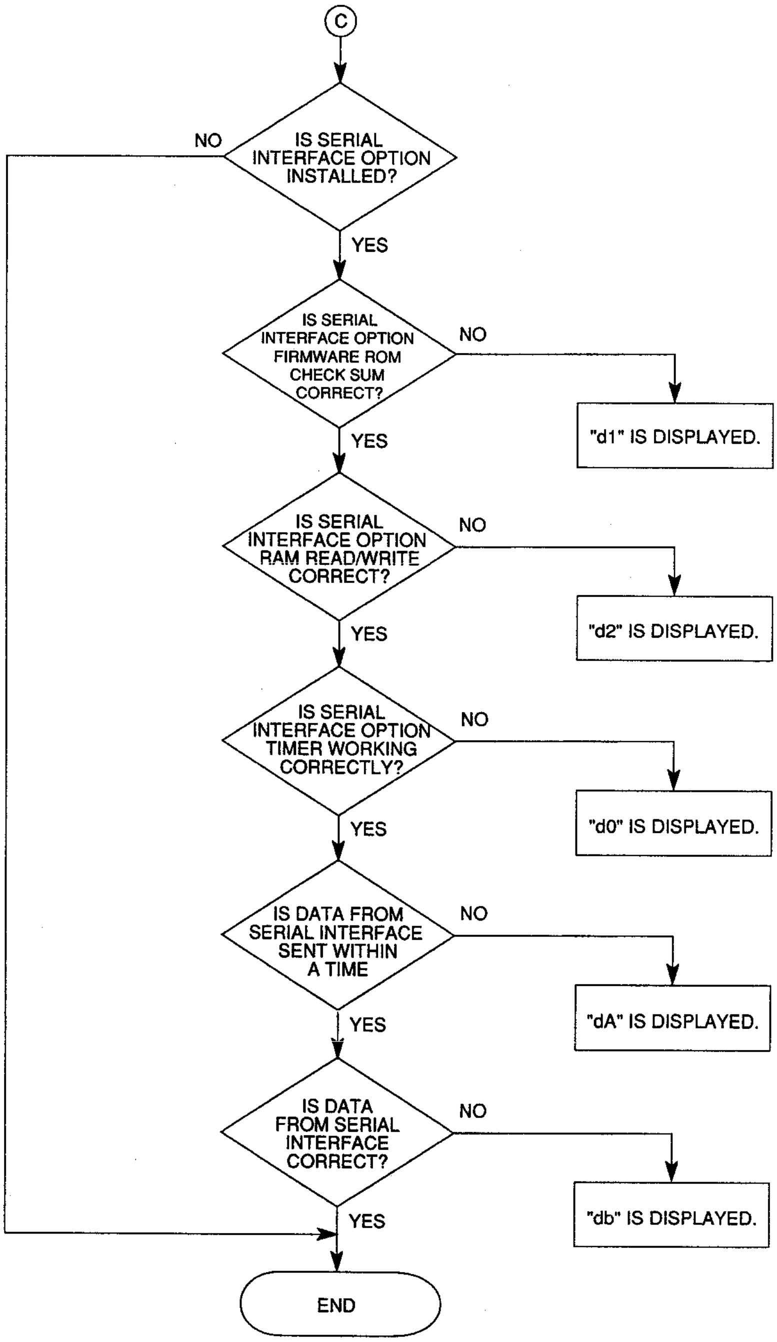

C
IS SERIAL INTERFACE OPTION INSTALLED?
NO
YES
IS SERIAL INTERFACE OPTION FIRMWARE ROM CHECK SUM CORRECT?
NO
"d1" IS DISPLAYED.
YES
IS SERIAL INTERFACE OPTION RAM READ/WRITE CORRECT?
NO
"d2" IS DISPLAYED.
YES
IS SERIAL INTERFACE OPTION TIMER WORKING CORRECTLY?
NO
"d0" IS DISPLAYED.
YES
IS DATA FROM SERIAL INTERFACE SENT WITHIN A TIME
NO
"dA" IS DISPLAYED.
YES
IS DATA FROM SERIAL INTERFACE CORRECT?
NO
"db" IS DISPLAYED.
YES
END

Figure 2-1 Error Codes (4/4)

Status Codes

The PITCH indicator also displays status codes which help to identify and correct minor printer problems. Table 2-4 lists each status code and its corrective action.

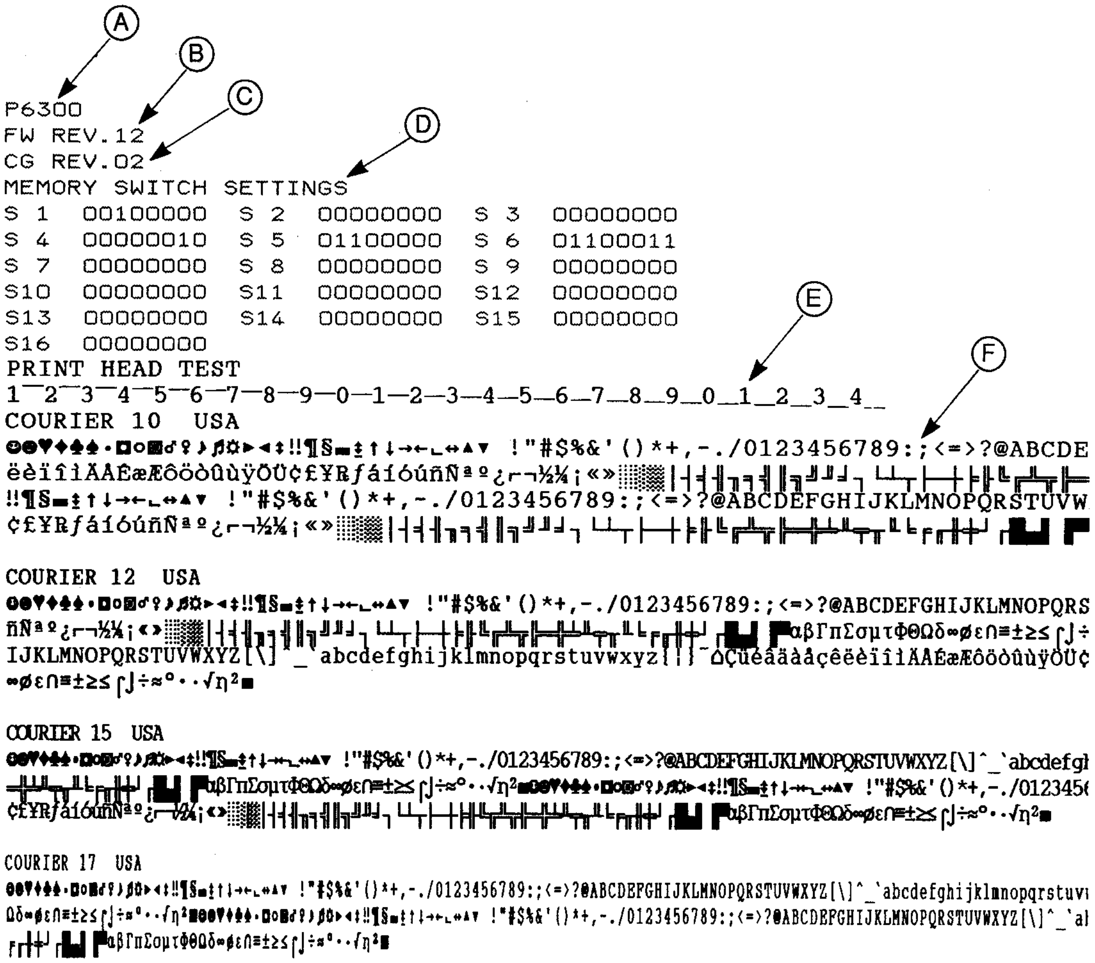
Table 2-4 Status Codes

STATUS CODE	MEANING	CORRECTIVE ACTION
Cd	Font card is pulled out while power is on.	Press the **SELECT** button.
CE	Multistrike ribbon cartridge is empty.	Replace ribbon and press the **SELECT** button.
CO	Top front cover is open.	Close the top front cover and press the **SELECT** button.
dL	Downloading data came but printer is not able to receive it.	Change buffer capacity to 48 KB by memory setting or press the **SELECT** button.
SE	Serial Interface buffer overflow.	Press the **SELECT** button.
SF	Paper jam or paper loading error with the sheet feeder installed.	Remove jammed paper, and press the **SELECT** button.
PH	Print head is overheated.	Printing resumes automatically when the print head cools down.
PO	Printer is out of paper.	Load paper and press the **SELECT** button.

Self-Test

If your Pinwriter will not print, run a self-test to determine whether the problem is with the printer itself.

1. Turn on the printer and press **SELECT** button to be DESELECT mode.
2. Load paper into the printer and press **MENU** buton to enter the memory switch menu mode, then the main menu is printed out.
3. Select item number 6, “TEST PRINT” by pressing the **PITCH** button repeatedly until “6” appears on the pitch indicator.
4. Press the **SELECT** button to begin the self-test.



```
P6300
FW REV.12
CG REV.02
MEMORY SWITCH SETTINGS
S 1  00100000   S 2  00000000   S 3  00000000
S 4  00000010   S 5  01100000   S 6  01100011
S 7  00000000   S 8  00000000   S 9  00000000
S10  00000000   S11  00000000   S12  00000000
S13  00000000   S14  00000000   S15  00000000
S16  00000000
PRINT HEAD TEST
1‾2‾3‾4‾5‾6‾7—8—9—0—1—2—3—4—5—6—7_8_9_0_1_2_3_4_
COURIER 10  USA

COURIER 12  USA

COURIER 15  USA

COURIER 17  USA
```

Ⓐ PRINTER MODEL

Ⓑ FIRMWARE REVISION LEVEL

Ⓒ CHARACTER GENERATOR REVISION LEVEL

Ⓓ MEMORY SWITCH SETTINGS

Ⓔ PRINT HEAD TEST PATTERN

Ⓕ SELF-TEST OUTPUT

Figure 2-2 Sample of Self-Test

Print Screen

If the self-test runs with no problems, you should now perform a print screen to determine if the interface is working correctly. With most computer systems, a print screen is performed by pressing the shift key and print screen key at the same time. If the screen does not print out, your computer is probably not communicating with your printer. Check your interface connections and try a print screen again. If the screen still does not print out, call your printer service representative for assistance.

If the screen does print out, the printer is probably fine and the problem lies with your software. See your software dealer for assistance.

Hex Dump

If you are having problems with a particular printer function such as underlining or condensed printing, perform a hex dump to determine whether the problem is with the printer or the software.

1. Create several lines of text using the function which is giving you problems. In this example, we will use the underlining function.
2. Exit the software package and press **SELECT** button to make the printer DESELECT mode.
3. Press **MENU** button. The printer enters the memory set mode and prints out the main menu.
4. Select item number 7, "HEX DUMP" by pressing the **PITCH** button repeatedly until "7" appears on the pitch indicator. Press the **SELECT** button to begin the hex dump.
5. The computer now sends your lines of text to the printer, which in turn prints out the data in hexadecimal form. You will want to check the hex codes to see if the underlining code appears.

   Try to find the underlining code (hexadecimal code: 1B 2D) among the hex codes in the hex dump printout (see Figure 2-3).
6. If the underlining hex code appears, the software is doing its job and the problem lies with the printer.

   If the underlining hex code does not appear, you have a software problem and should see your software dealer.

```
P6300
FW REV.12
CG REV.02
MEMORY SWITCH SETTINGS
S 1  00100000  S 2  00000000  S 3  00000000
S 4  00000010  S 5  01100000  S 6  01100011
S 7  00000000  S 8  00000000  S 9  00000000
S10  00000000  S11  00000000  S12  00000000
S13  00000000  S14  00000000  S15  00000000
S16  00000000
1B 2D 01 20 21 22 23 24 25 26 27 28 29 2A 2B 2C     .-. !"#$%&'()*+,
2D 2E 2F 30 31 32 33 34 35 36 37 38 39 3A 3B 3C     -./0123456789:;<
3D 3E 3F 40 41 42 43 44 45 46 47 48 49 4A 4B 4C     =>?@ABCDEFGHIJKL
4D 4E 4F 50 51 52 53 54 55 56 57 58 59 5A 5B 5C     MNOPQRSTUVWXYZ[\
5D 5E 5F 60 61 62 63 64 65 66 67 68 69 6A 6B 6C     ]^_`abcdefghijkl
6D 6E 6F 70 71 72 73 74 75 76 77 78 79 7A 7B 7C     mnopqrstuvwxyz{¦
7D 7E 0D 0A
```

Figure 2-3 Sample of Hex Dump

Control Panel Special Feature

You can perform the tests and access the printer settings by using the special features of the control panel. Table 2-5 gives the switch combinations of the special features in on-line status. Table 2-5 gives the switch combinations of the special features that are operated with the power-on.

Table 2-5 Control Panel Special Features (Online)

SPECIAL FEATURES	FUNCTION	TYPE STYLE	PITCH	MENU	LOAD UNLOAD	TEAR PAPER	FEED	SELECT
Reset Printer	Resets the printer force.	-	-	-	-	O	O	O
Move to Left Position	Move the carrier to the left margin position	-	-	-	-	O	-	O
Set TOF/ Short Adj.	Resets the current print position as the top of form. Short adj. is available even with cover open.	-	-	-	-	-	O	O
Centering Position Change	Changes the print centering position of the auto-load or the hot-zone.	-	-	-	O	-	-	O

Note: In the above switch combination, SELECT condition will be changed but other switch original function is not activated.

Table 2-6 Control Panel Special Features (Power On)

SPECIAL FEATURES	FUNCTION	TYPE STYLE	PITCH	MENU	LOAD UNLOAD	TEAR PAPER	FEED	SELECT
Secret Mode	Operates the memory switches by bit.	-	-	O	O	O	O	-
		To start this mode, press MENU button, then press SELECT button.						
Hex Dump Mode	Prints the hex dump.	-	-	-	O	-	-	-
EEPROM Access Mode	Sets the EEPROM through the parallel interface.	-	-	O	O	O	O	-
Test Printing	Prints the test pattern.	-	-	-	-	-	O	-
H/W Self-Check	Performs the hardware self-check.	O	O	-	-	-	-	-
Aging Mode	Sets the aging mode.	-	-	O	O	O	O	-
		To start this mode, press SELECT button, then power off, then power on.						
Mechanism Test Mode	Tests the precisions of the spacing and the line feed.	-	-	O	O	O	O	-
		To start this mode, press FEED button, then press SELECT button.						
Running Test Mode	Checks the precision of the printer.	-	-	O	O	O	O	-
		To start this mode, press TEAR PAPER button, then press SELECT button.						

Test Points

When the power supply seems to be defective, check the output voltage first of all. CN2 on the power board allow you to check the +5 V and +34 V outputs.

PSD POWER (B): 808-891104-002-A

Use the following procedure to check the voltage.

1. To check +5 V output voltage, connect a positive lead to pin 1 and negative lead to pin 2.
2. To check +34 V output voltage, connect a positive lead to pin 5 or 6 and negative lead to pin 3 or 4.

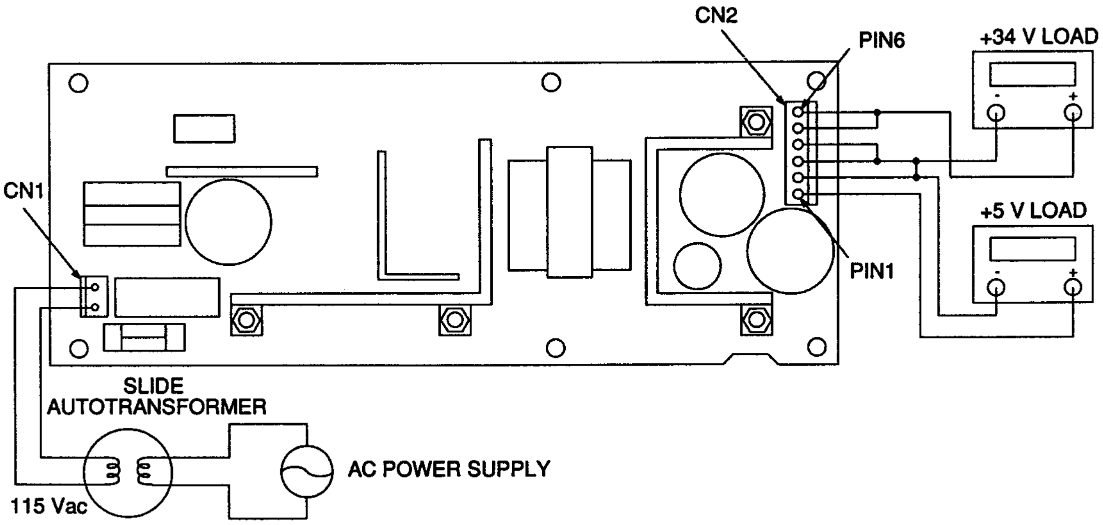

CN2
PIN6
+34 V LOAD
-
+
CN1
+5 V LOAD
-
+
PIN1
SLIDE
AUTOTRANSFORMER
AC POWER SUPPLY
115 Vac

Figure 2-4 PSD Power (B) Output Voltage Check

PSD POWER (C): 808-891104-003-A

Use the following procedure to check the voltage.

1. To check +5 V output voltage, connect a positive lead to pin 1 and negative lead to pin 2.
2. To check +34 V output voltage, connect a positive lead to pin 5 or 6 and negative lead to pin 3 or 4.

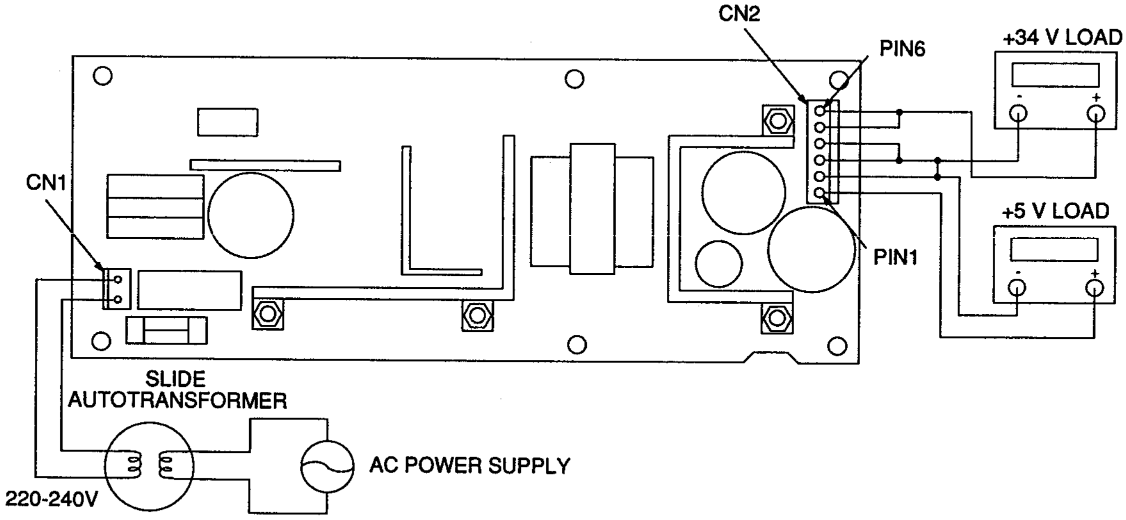

CN2
PIN6
+34 V LOAD
CN1
+5 V LOAD
PIN1
SLIDE
AUTOTRANSFORMER
AC POWER SUPPLY
220-240V

Figure 2-5 PSD Power (C) (GRP003) Output Voltage Check

PSD POWER (C): 808-891104-303-A

Use the following procedure to check the voltage.

1. To check +5 V output voltage, connect a positive lead to pin 6 and negative lead to pin 5.
2. To check +34 V output voltage, connect a positive lead to pin 1 or 2 and negative lead to pin 3 or 4.

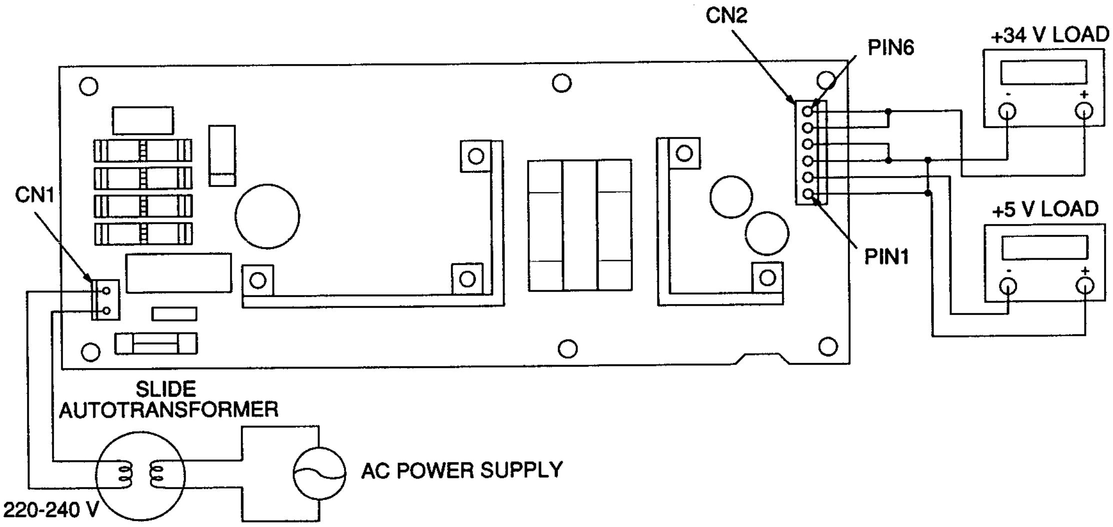

CN2
PIN6
+34 V LOAD
-
+
CN1
+5 V LOAD
-
+
PIN1
SLIDE
AUTOTRANSFORMER
AC POWER SUPPLY
220-240 V

Figure 2-6 PSD Power (C) (GRP303) Output Voltage Check

SPECIFIC TROUBLESHOOTING PROCEDURES

The following flowcharts give troubleshooting procedures for these printer problems.

- Power lamp does not light.
- Carrier does not initialize.
- Control panel buttons do not function properly.
- Control panel lamps do not function properly.
- Self-test printout is abnormal.
- On-line printing using the serial interface is abnormal.
- On-line printing using the parallel interface is abnormal.
- Color printing is abnormal.
- PSD Power (B) or PSD Power (C) (GRP 003) is faulty.
- PSD Power (C) (GRP 303) is faulty.

Refer to the appropriate flowchart for solutions to a particular problem.

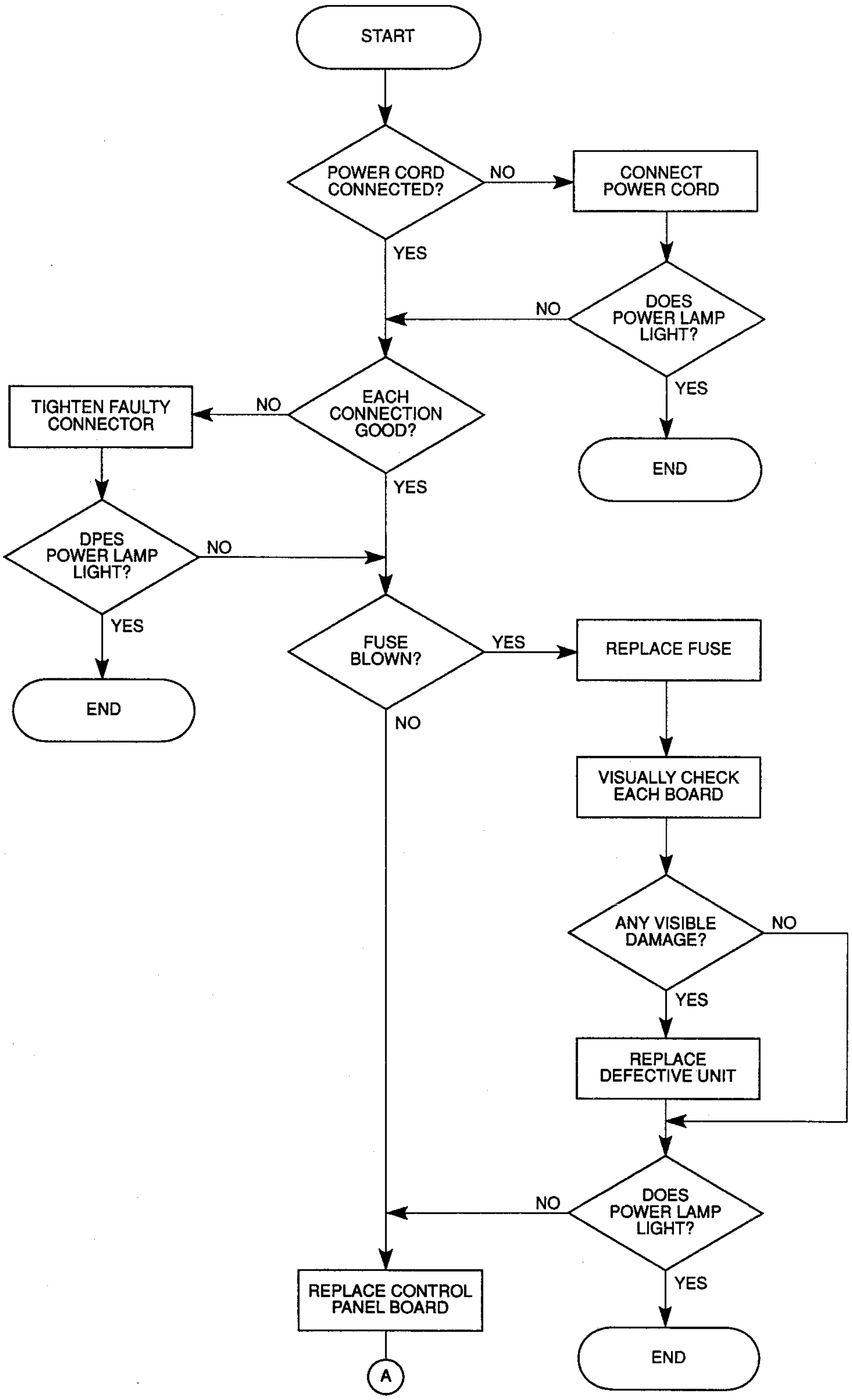

START
POWER CORD CONNECTED?
NO
CONNECT POWER CORD
YES
DOES POWER LAMP LIGHT?
NO
YES
END
EACH CONNECTION GOOD?
NO
TIGHTEN FAULTY CONNECTOR
YES
DPES POWER LAMP LIGHT?
NO
YES
END
FUSE BLOWN?
YES
REPLACE FUSE
NO
VISUALLY CHECK EACH BOARD
ANY VISIBLE DAMAGE?
NO
YES
REPLACE DEFECTIVE UNIT
DOES POWER LAMP LIGHT?
NO
YES
REPLACE CONTROL PANEL BOARD
END
A

Figure 2-7 Power Lamp Does Not Light (1 of 2)

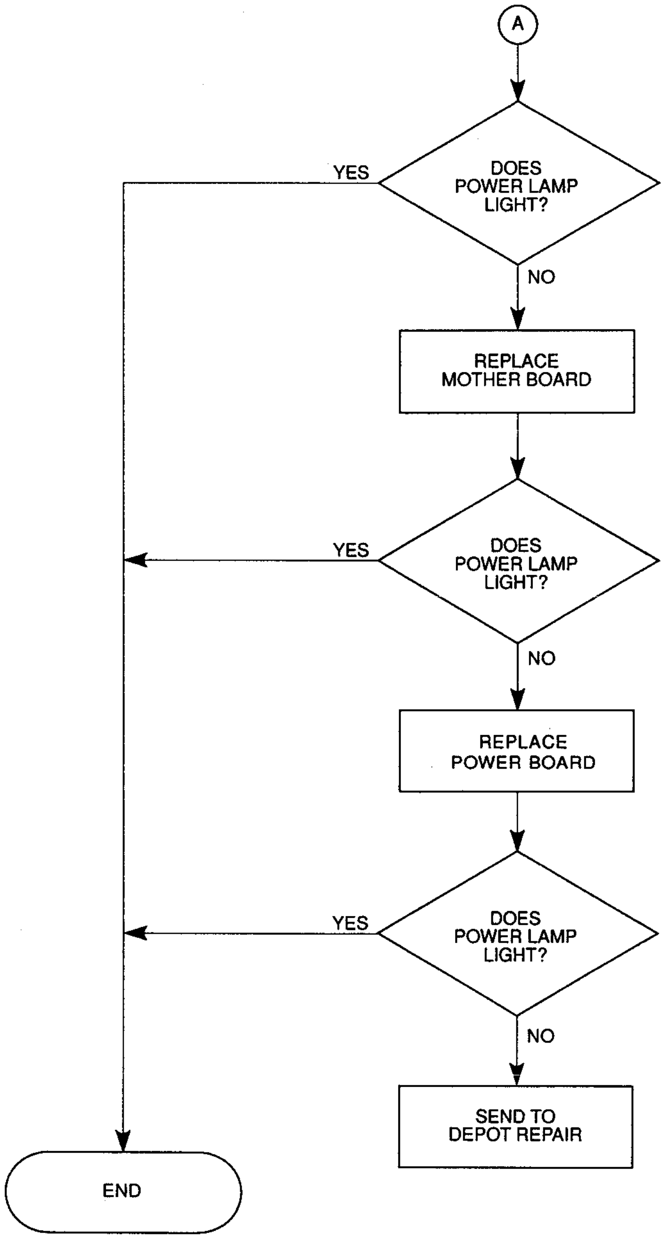

A
DOES POWER LAMP LIGHT?
YES
NO
REPLACE MOTHER BOARD
DOES POWER LAMP LIGHT?
YES
NO
REPLACE POWER BOARD
DOES POWER LAMP LIGHT?
YES
NO
SEND TO DEPOT REPAIR
END

Figure 2-7 Power Lamp Does Not Light (2 of 2)

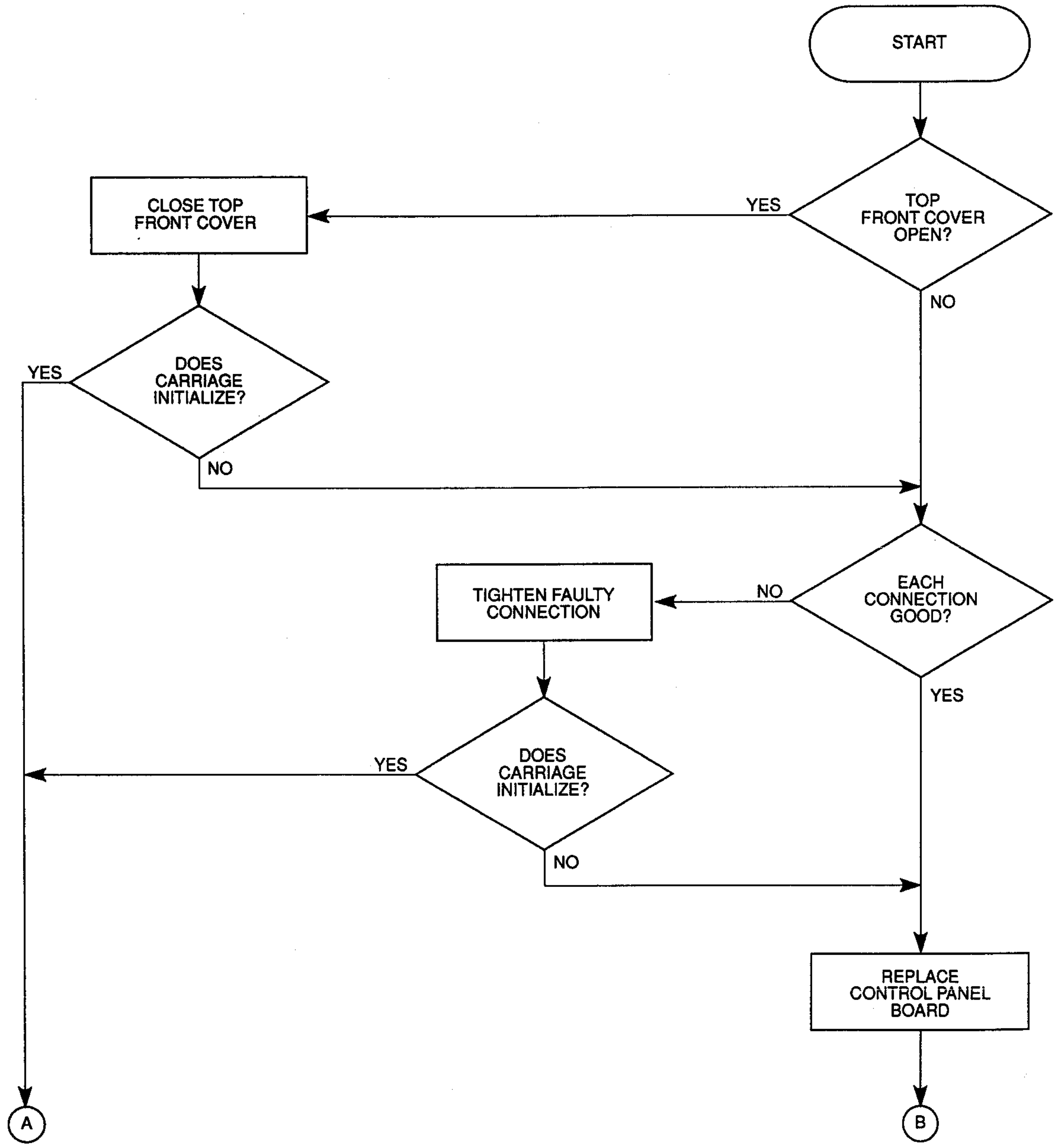

START
TOP FRONT COVER OPEN?
YES
NO
CLOSE TOP FRONT COVER
DOES CARRIAGE INITIALIZE?
YES
NO
EACH CONNECTION GOOD?
NO
YES
TIGHTEN FAULTY CONNECTION
DOES CARRIAGE INITIALIZE?
YES
NO
REPLACE CONTROL PANEL BOARD
A
B

Figure 2-8 Carrier Does Not Initialize (1 of 2)

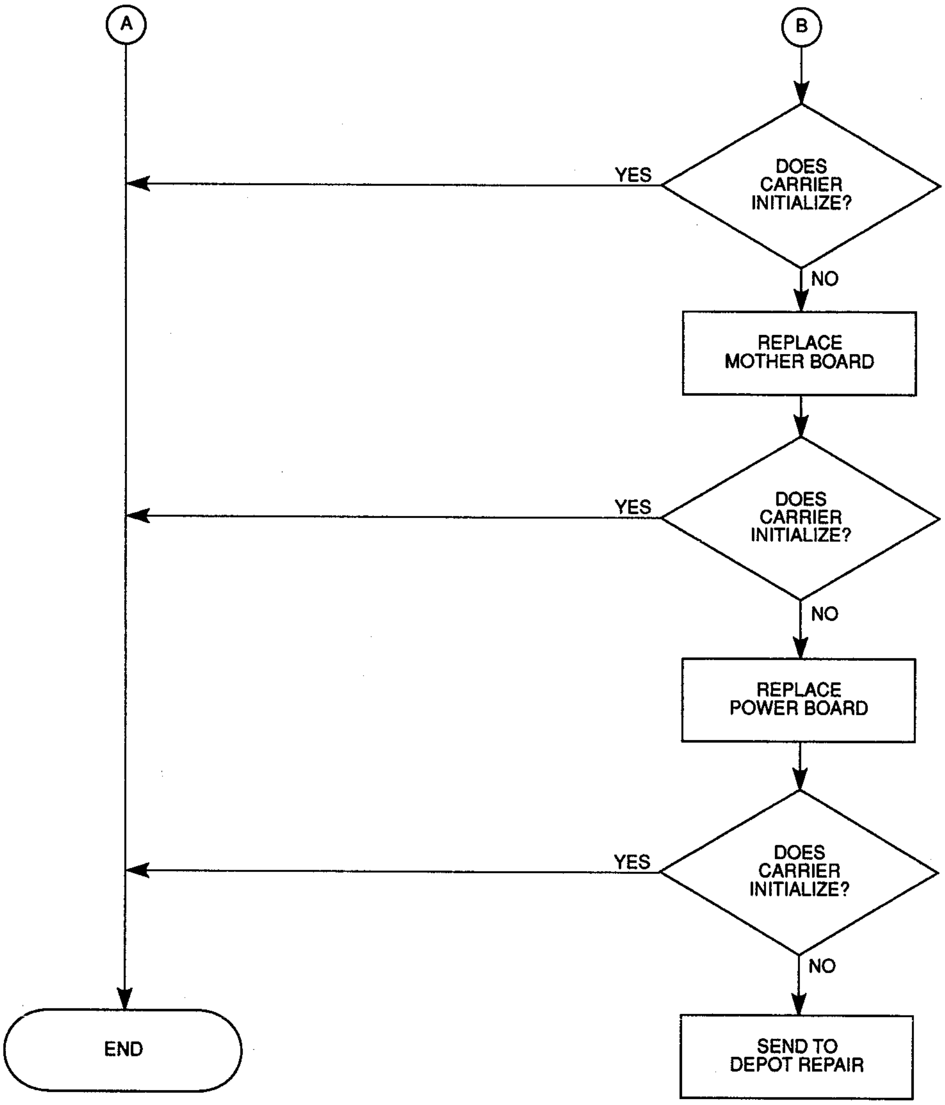

A
B
YES
DOES CARRIER INITIALIZE?
NO
REPLACE MOTHER BOARD
YES
DOES CARRIER INITIALIZE?
NO
REPLACE POWER BOARD
YES
DOES CARRIER INITIALIZE?
NO
END
SEND TO DEPOT REPAIR

Figure 2-8 Carrier Does Not Initialize (2 of 2)

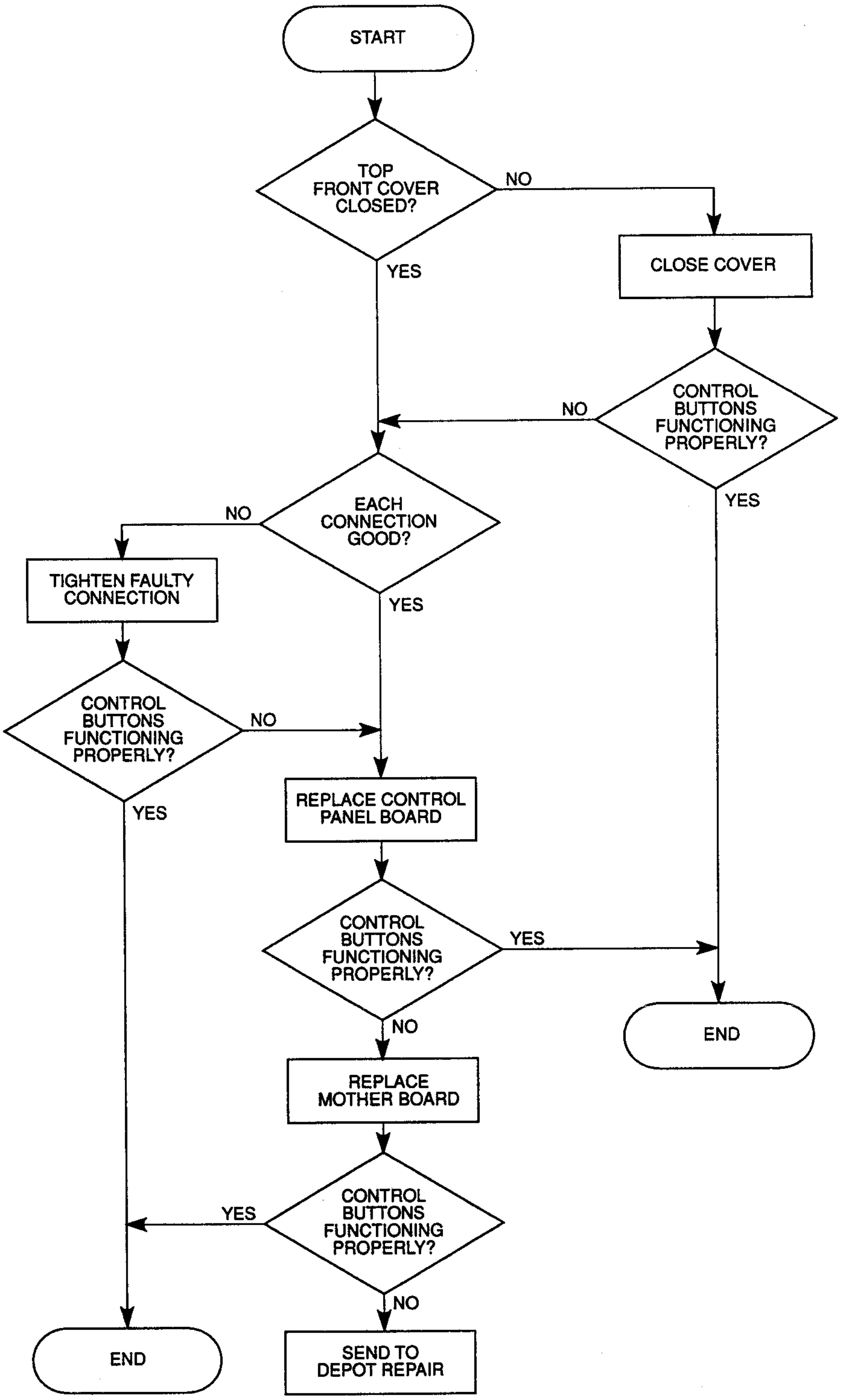

START
TOP FRONT COVER CLOSED?
NO
YES
CLOSE COVER
CONTROL BUTTONS FUNCTIONING PROPERLY?
NO
YES
EACH CONNECTION GOOD?
NO
YES
TIGHTEN FAULTY CONNECTION
CONTROL BUTTONS FUNCTIONING PROPERLY?
NO
YES
REPLACE CONTROL PANEL BOARD
CONTROL BUTTONS FUNCTIONING PROPERLY?
YES
NO
END
REPLACE MOTHER BOARD
CONTROL BUTTONS FUNCTIONING PROPERLY?
YES
NO
END
SEND TO DEPOT REPAIR

Figure 2-9 Control Panel Buttons Do Not Function Properly

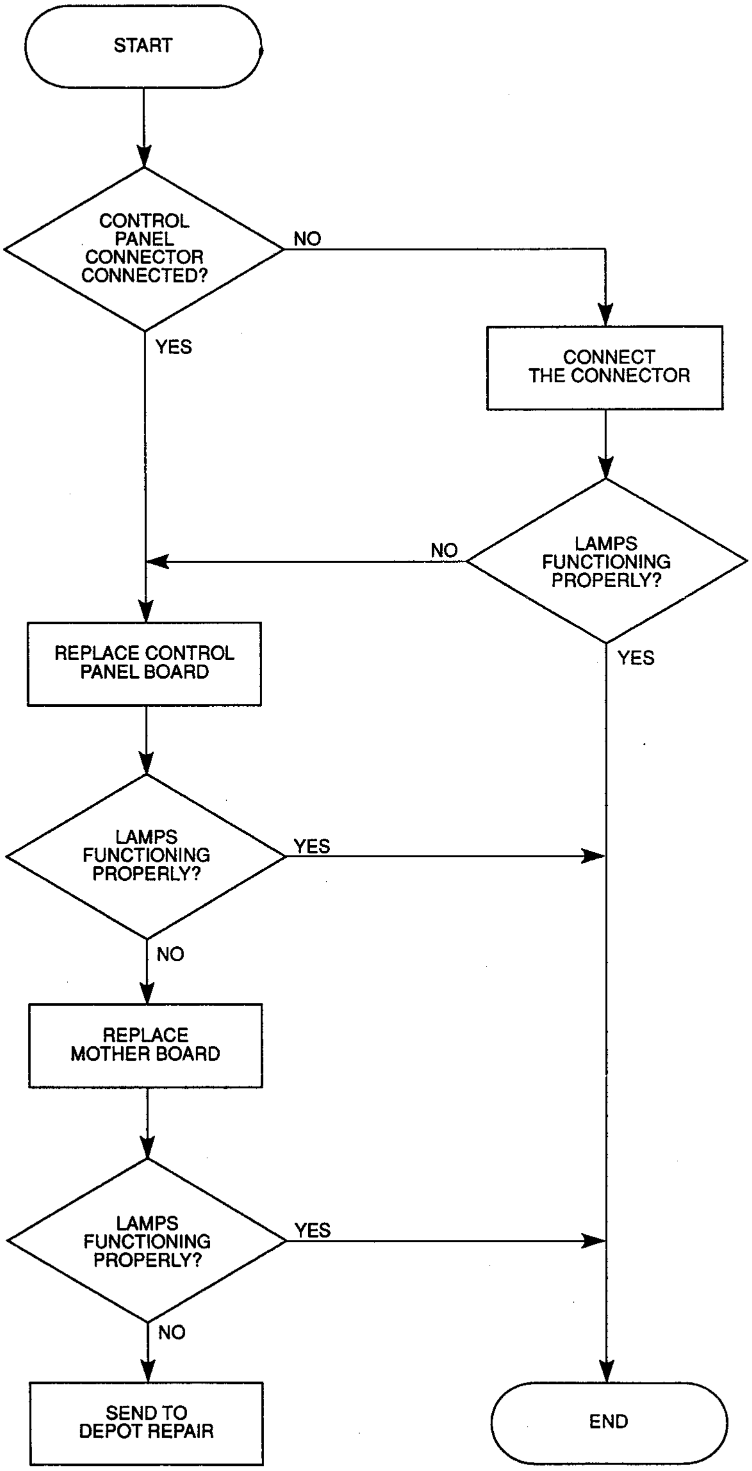

START
CONTROL PANEL CONNECTOR CONNECTED?
NO
YES
CONNECT THE CONNECTOR
LAMPS FUNCTIONING PROPERLY?
NO
YES
REPLACE CONTROL PANEL BOARD
LAMPS FUNCTIONING PROPERLY?
YES
NO
REPLACE MOTHER BOARD
LAMPS FUNCTIONING PROPERLY?
YES
NO
SEND TO DEPOT REPAIR
END

Figure 2-10 Control Panel Lamps Do Not Function Properly

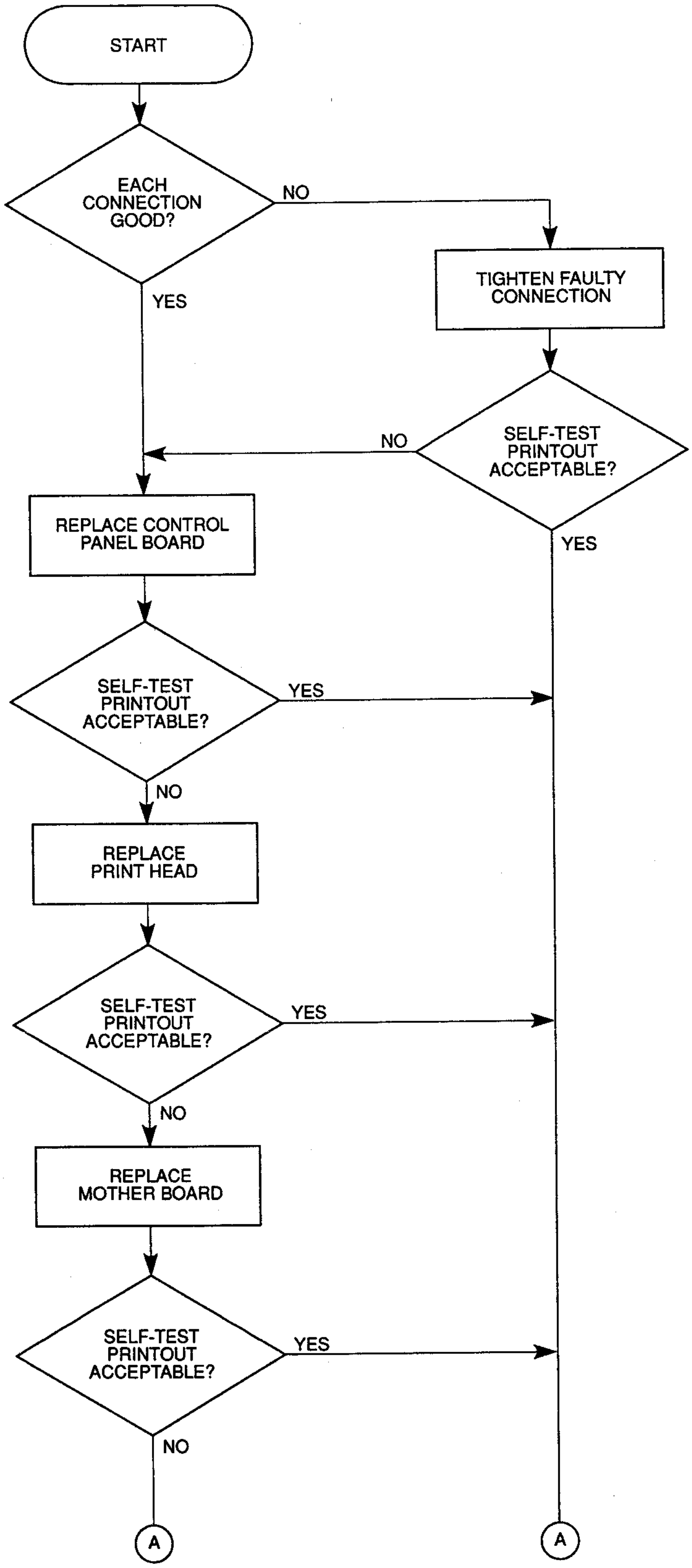

START
EACH CONNECTION GOOD?
NO
YES
TIGHTEN FAULTY CONNECTION
SELF-TEST PRINTOUT ACCEPTABLE?
NO
YES
REPLACE CONTROL PANEL BOARD
SELF-TEST PRINTOUT ACCEPTABLE?
YES
NO
REPLACE PRINT HEAD
SELF-TEST PRINTOUT ACCEPTABLE?
YES
NO
REPLACE MOTHER BOARD
SELF-TEST PRINTOUT ACCEPTABLE?
YES
NO
A
A

Figure 2-11 Self-Test Printout Is Abnormal (1 of 2)

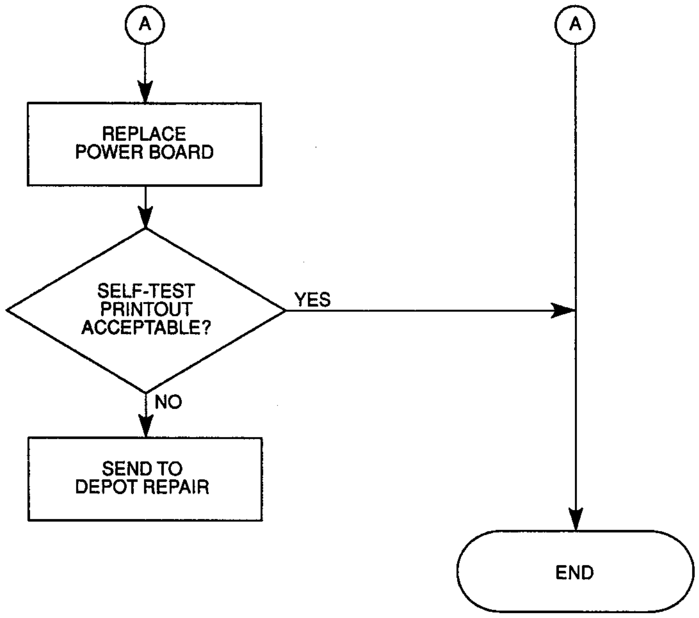

A
REPLACE POWER BOARD
SELF-TEST PRINTOUT ACCEPTABLE?
YES
NO
SEND TO DEPOT REPAIR
A
END

Figure 2-11 Self-Test Printout Is Abnormal (2 of 2)

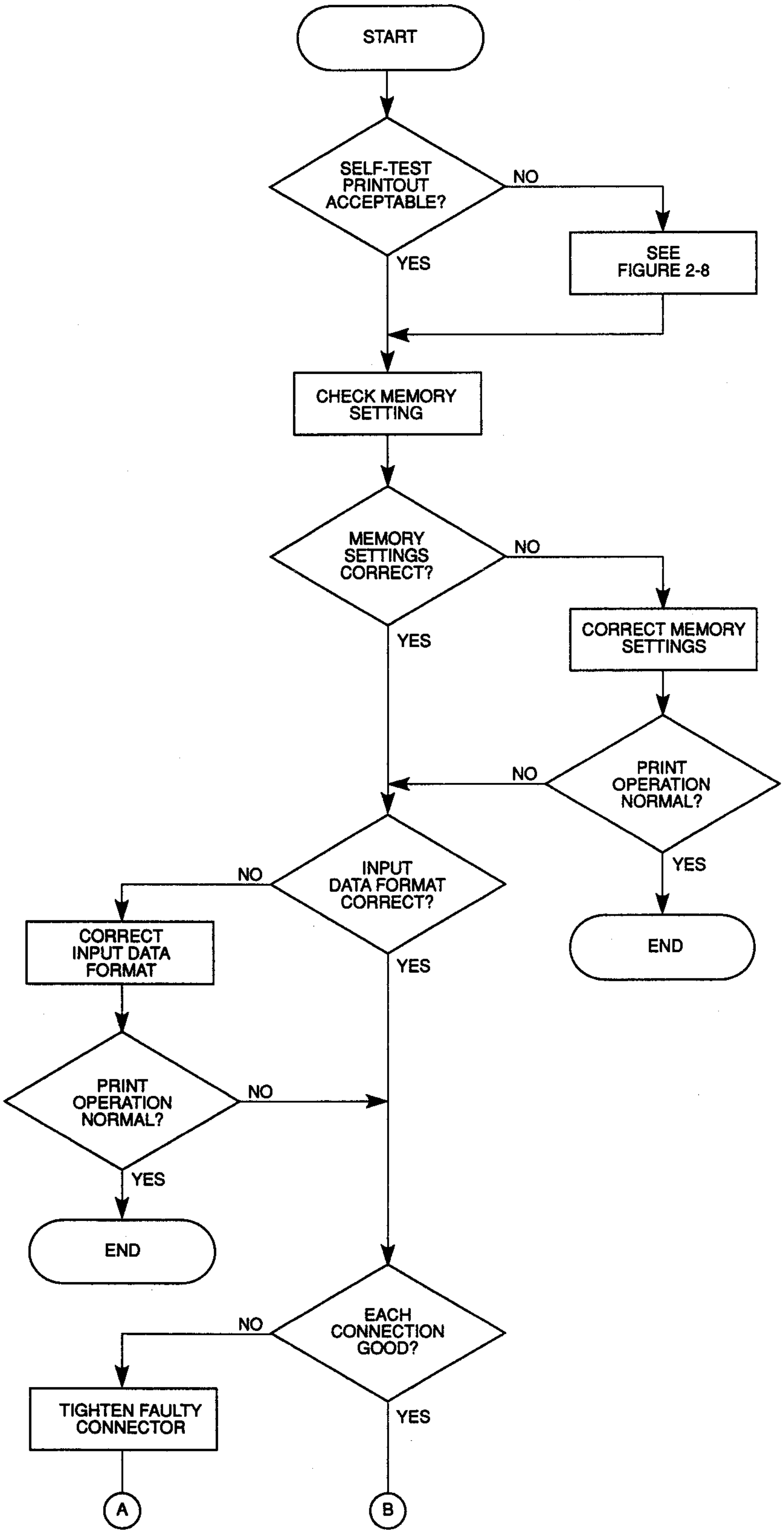

START
SELF-TEST PRINTOUT ACCEPTABLE?
NO
SEE FIGURE 2-8
YES
CHECK MEMORY SETTING
MEMORY SETTINGS CORRECT?
NO
CORRECT MEMORY SETTINGS
YES
PRINT OPERATION NORMAL?
NO
YES
END
INPUT DATA FORMAT CORRECT?
NO
CORRECT INPUT DATA FORMAT
YES
PRINT OPERATION NORMAL?
NO
YES
END
EACH CONNECTION GOOD?
NO
TIGHTEN FAULTY CONNECTOR
YES
A
B

Figure 2-12 On-Line Printing Using the Serial Interface Is Abnormal (1 of 2)

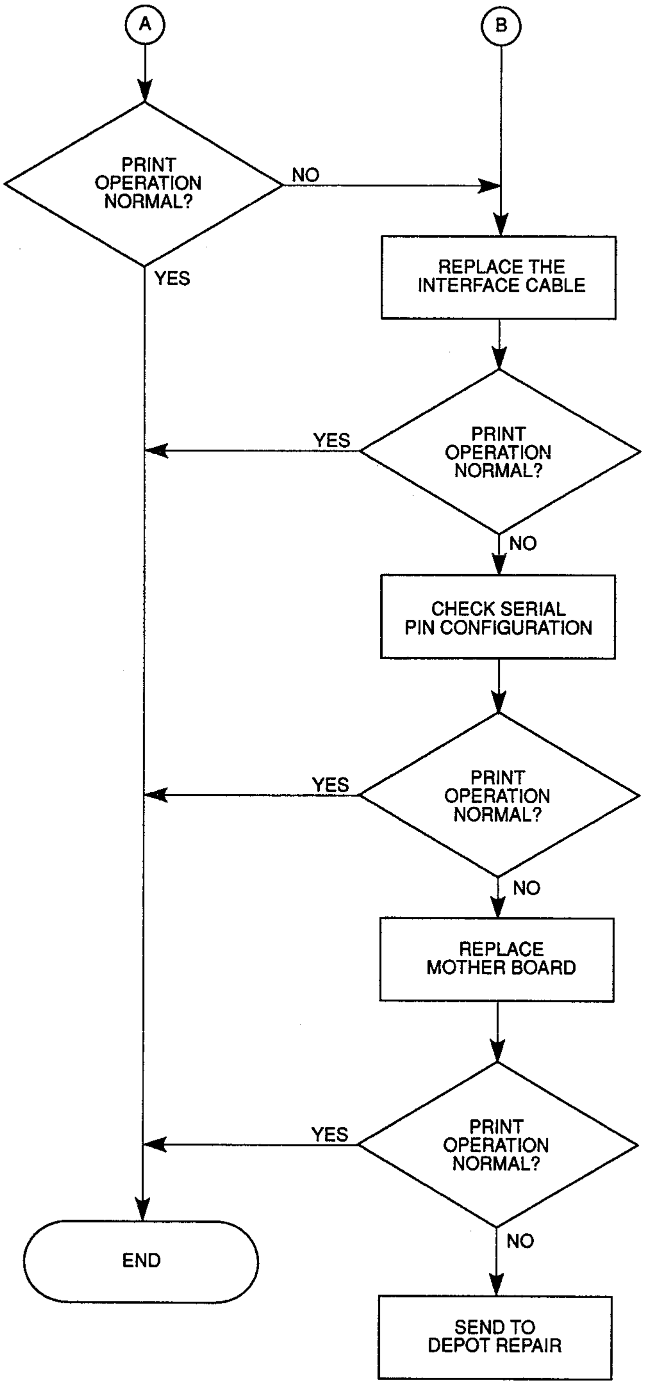

A
B
PRINT OPERATION NORMAL?
NO
YES
REPLACE THE INTERFACE CABLE
YES
PRINT OPERATION NORMAL?
NO
CHECK SERIAL PIN CONFIGURATION
YES
PRINT OPERATION NORMAL?
NO
REPLACE MOTHER BOARD
YES
PRINT OPERATION NORMAL?
NO
END
SEND TO DEPOT REPAIR

Figure 2-12 On-Line Printing Using the Serial Interface Is Abnormal (2 of 2)

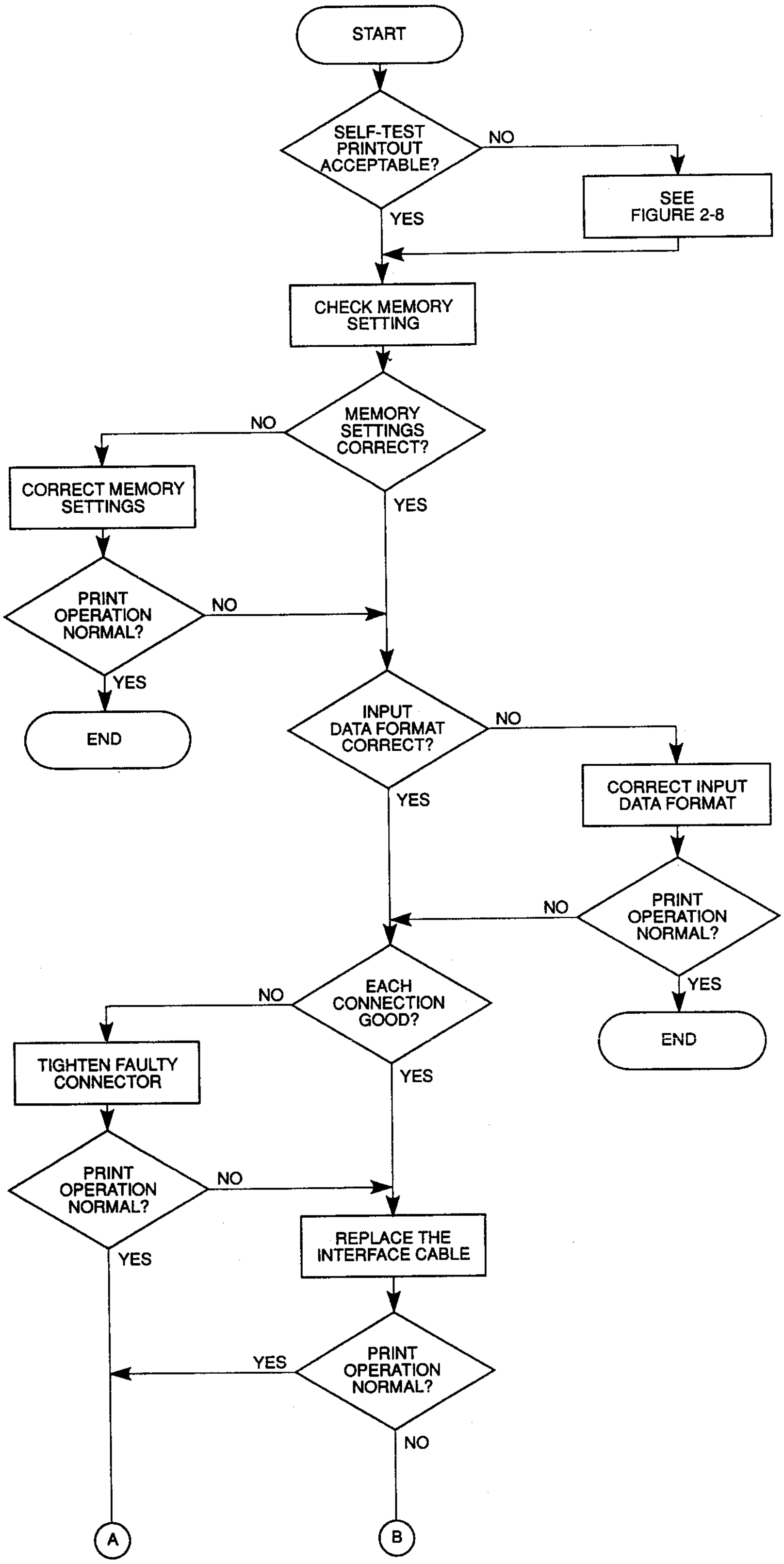

START
SELF-TEST PRINTOUT ACCEPTABLE?
NO
SEE FIGURE 2-8
YES
CHECK MEMORY SETTING
MEMORY SETTINGS CORRECT?
NO
CORRECT MEMORY SETTINGS
YES
PRINT OPERATION NORMAL?
NO
YES
END
INPUT DATA FORMAT CORRECT?
NO
CORRECT INPUT DATA FORMAT
YES
PRINT OPERATION NORMAL?
NO
YES
END
EACH CONNECTION GOOD?
NO
TIGHTEN FAULTY CONNECTOR
YES
PRINT OPERATION NORMAL?
NO
YES
REPLACE THE INTERFACE CABLE
PRINT OPERATION NORMAL?
YES
NO
A
B

Figure 2-13 On-Line Printing Using the Parallel Interface Is Abnormal (1 of 2)

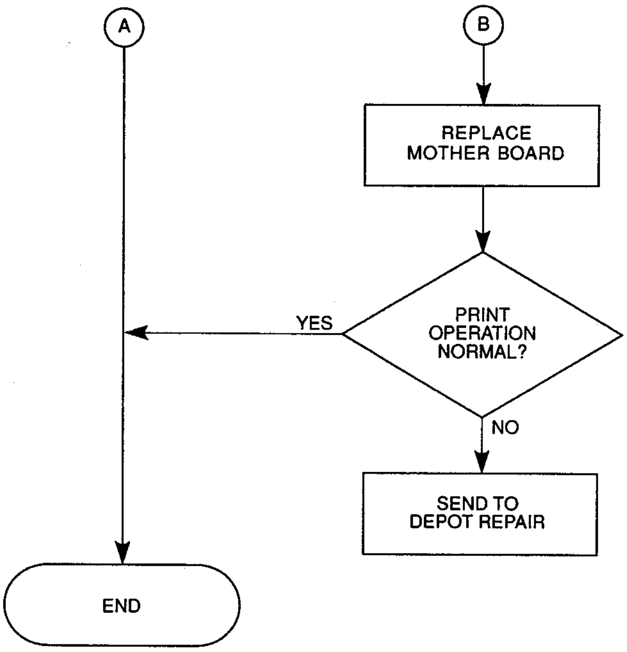

A
B
REPLACE MOTHER BOARD
PRINT OPERATION NORMAL?
YES
NO
SEND TO DEPOT REPAIR
END

Figure 2-13 On-Line Printing Using the Parallel Interface Is Abnormal (2 of 2)

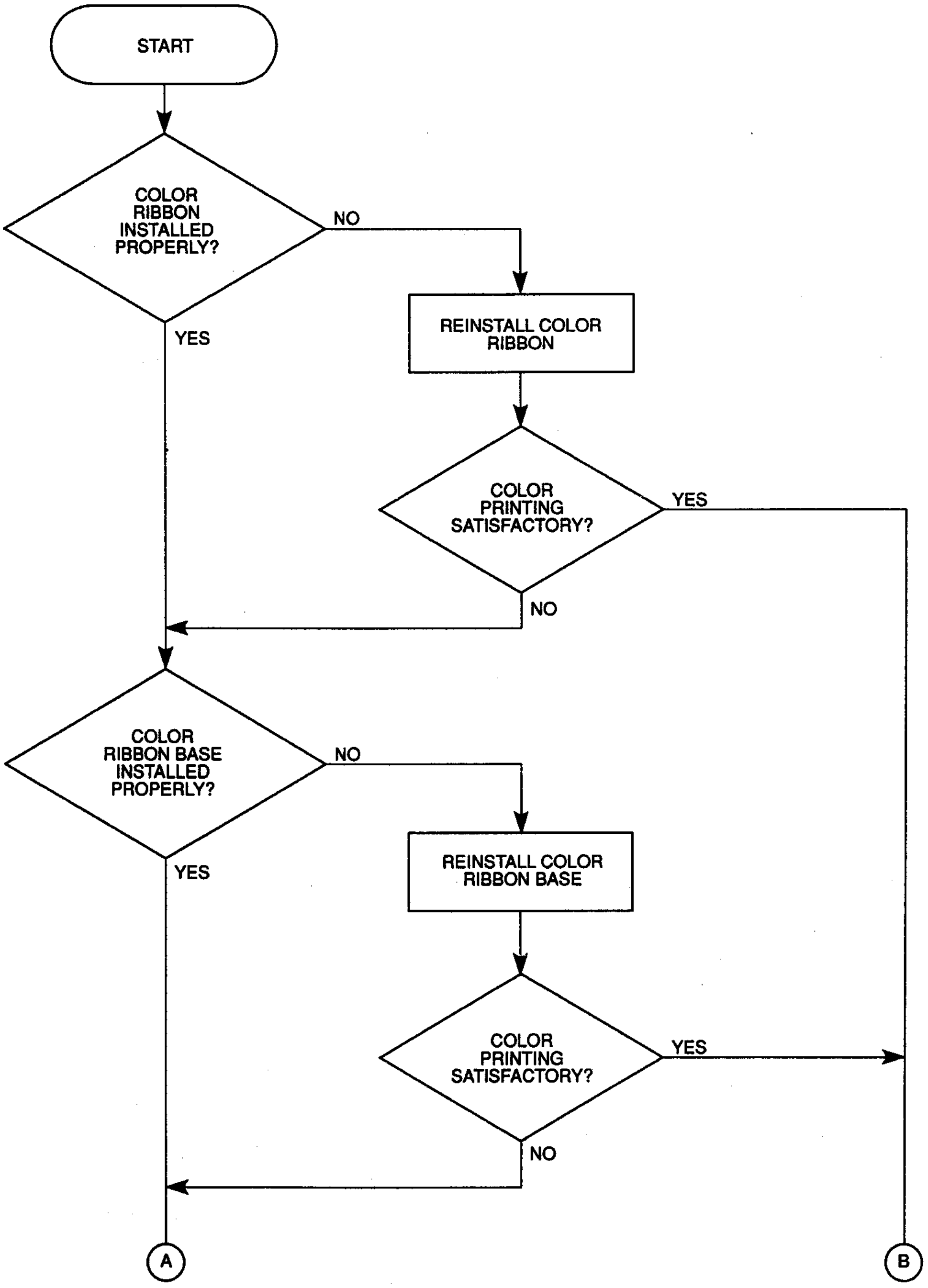

START
COLOR RIBBON INSTALLED PROPERLY?
NO
YES
REINSTALL COLOR RIBBON
COLOR PRINTING SATISFACTORY?
YES
NO
COLOR RIBBON BASE INSTALLED PROPERLY?
NO
YES
REINSTALL COLOR RIBBON BASE
COLOR PRINTING SATISFACTORY?
YES
NO
A
B

Figure 2-14 Color Printing Is Abnormal (1 of 2)

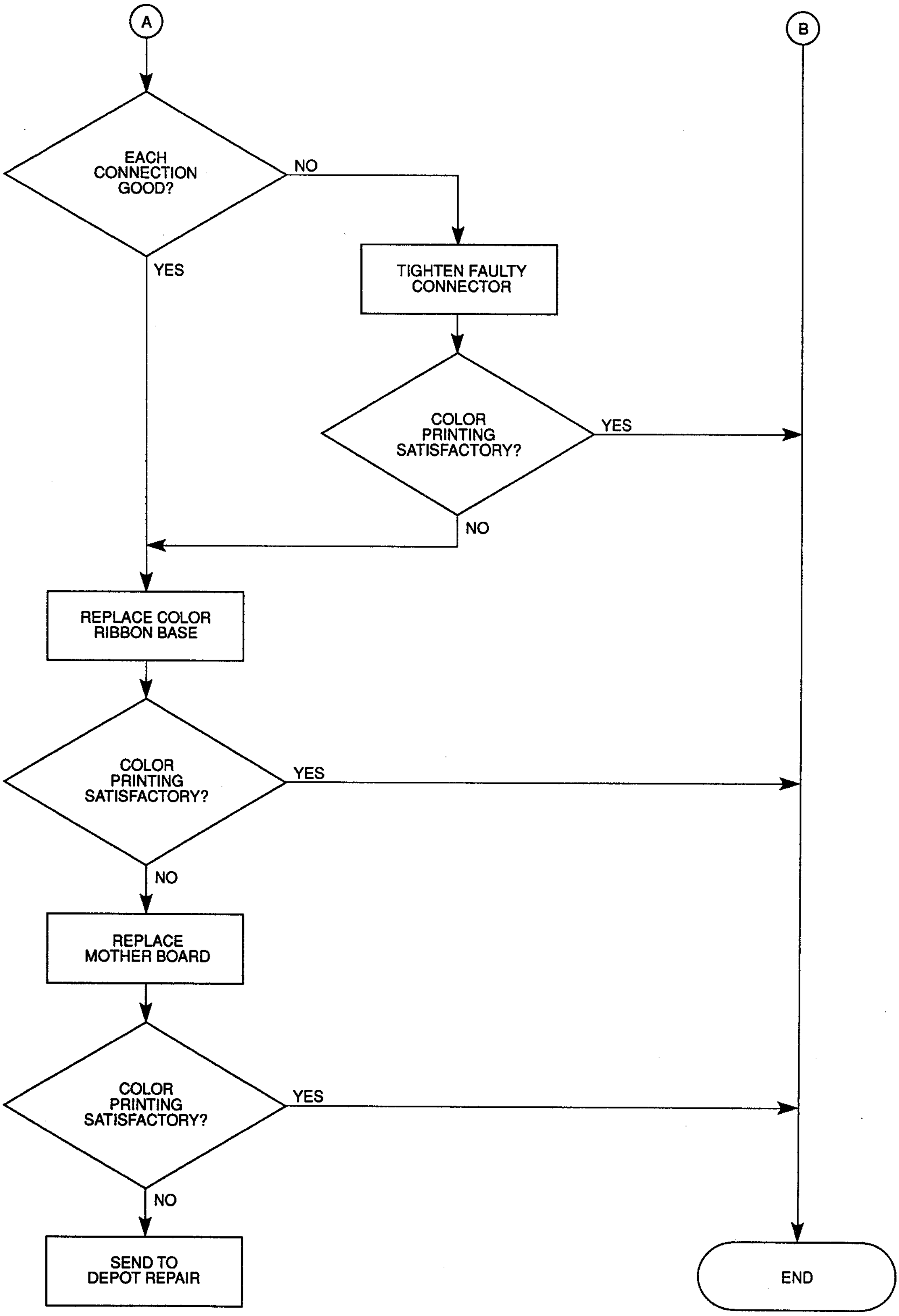

A
B
EACH CONNECTION GOOD?
NO
YES
TIGHTEN FAULTY CONNECTOR
COLOR PRINTING SATISFACTORY?
YES
NO
REPLACE COLOR RIBBON BASE
COLOR PRINTING SATISFACTORY?
YES
NO
REPLACE MOTHER BOARD
COLOR PRINTING SATISFACTORY?
YES
NO
SEND TO DEPOT REPAIR
END

Figure 2-14 Color Printing Is Abnormal (2 of 2)

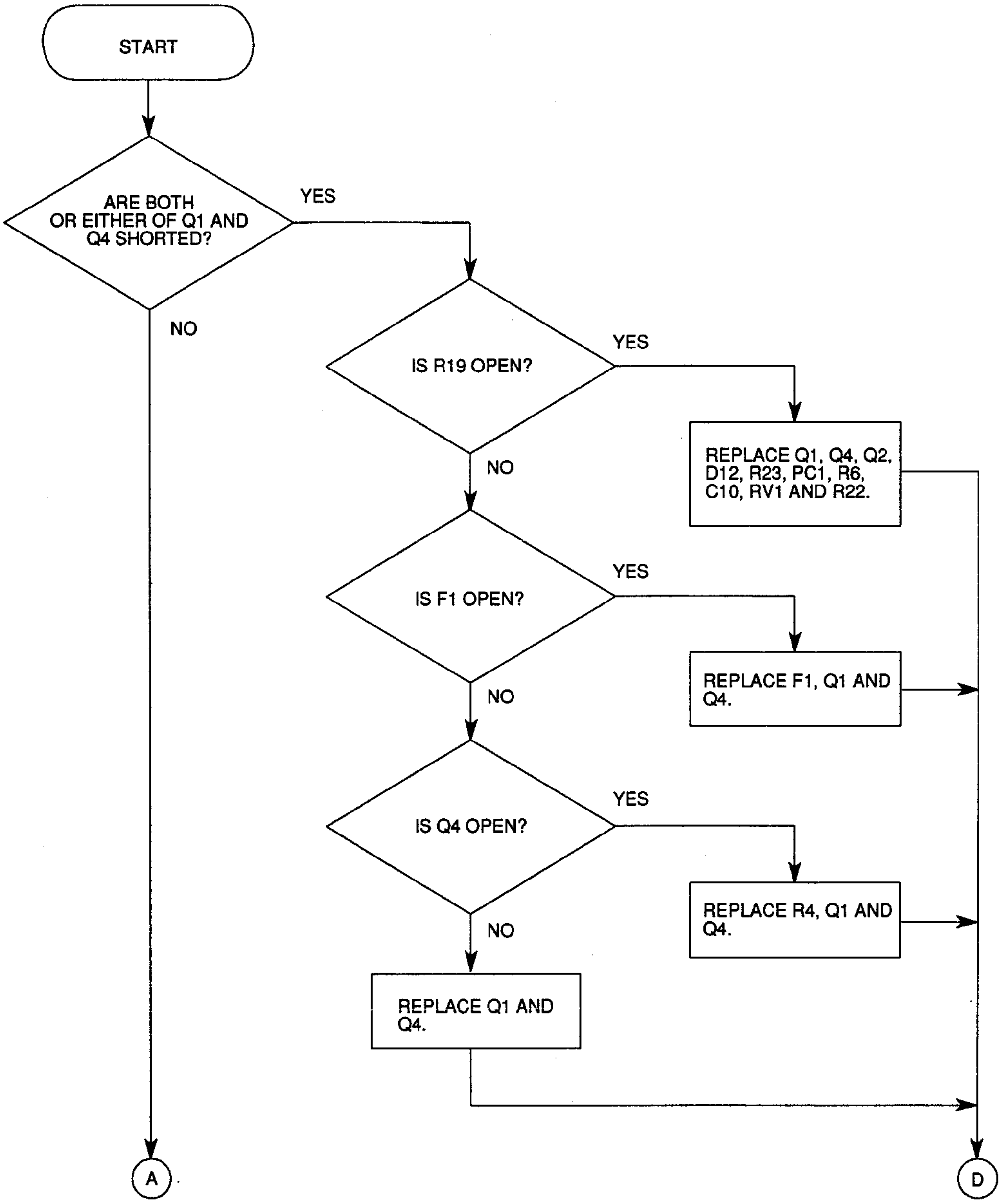

START
ARE BOTH OR EITHER OF Q1 AND Q4 SHORTED?
YES
NO
IS R19 OPEN?
YES
REPLACE Q1, Q4, Q2, D12, R23, PC1, R6, C10, RV1 AND R22.
NO
IS F1 OPEN?
YES
REPLACE F1, Q1 AND Q4.
NO
IS Q4 OPEN?
YES
REPLACE R4, Q1 AND Q4.
NO
REPLACE Q1 AND Q4.
A
D

Figure 2-15 PSD Power (B) or PSD Power (C) (GRP003) is faulty (1 of 4)

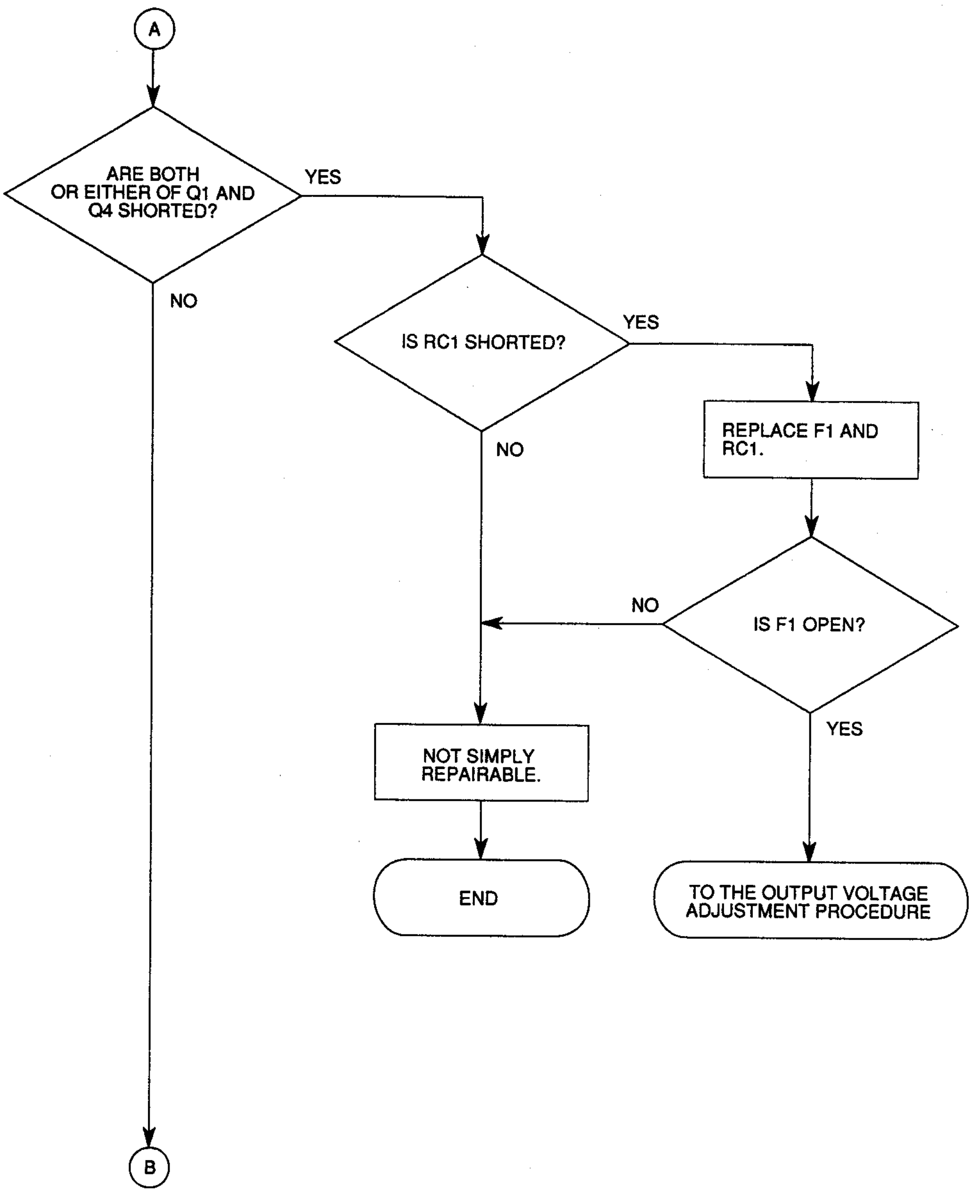

A
ARE BOTH OR EITHER OF Q1 AND Q4 SHORTED?
YES
NO
IS RC1 SHORTED?
YES
NO
REPLACE F1 AND RC1.
IS F1 OPEN?
NO
YES
NOT SIMPLY REPAIRABLE.
END
TO THE OUTPUT VOLTAGE ADJUSTMENT PROCEDURE
B

Figure 2-15 PSD Power (B) or PSD Power (C) (GRP003) is faulty (2 of 4)

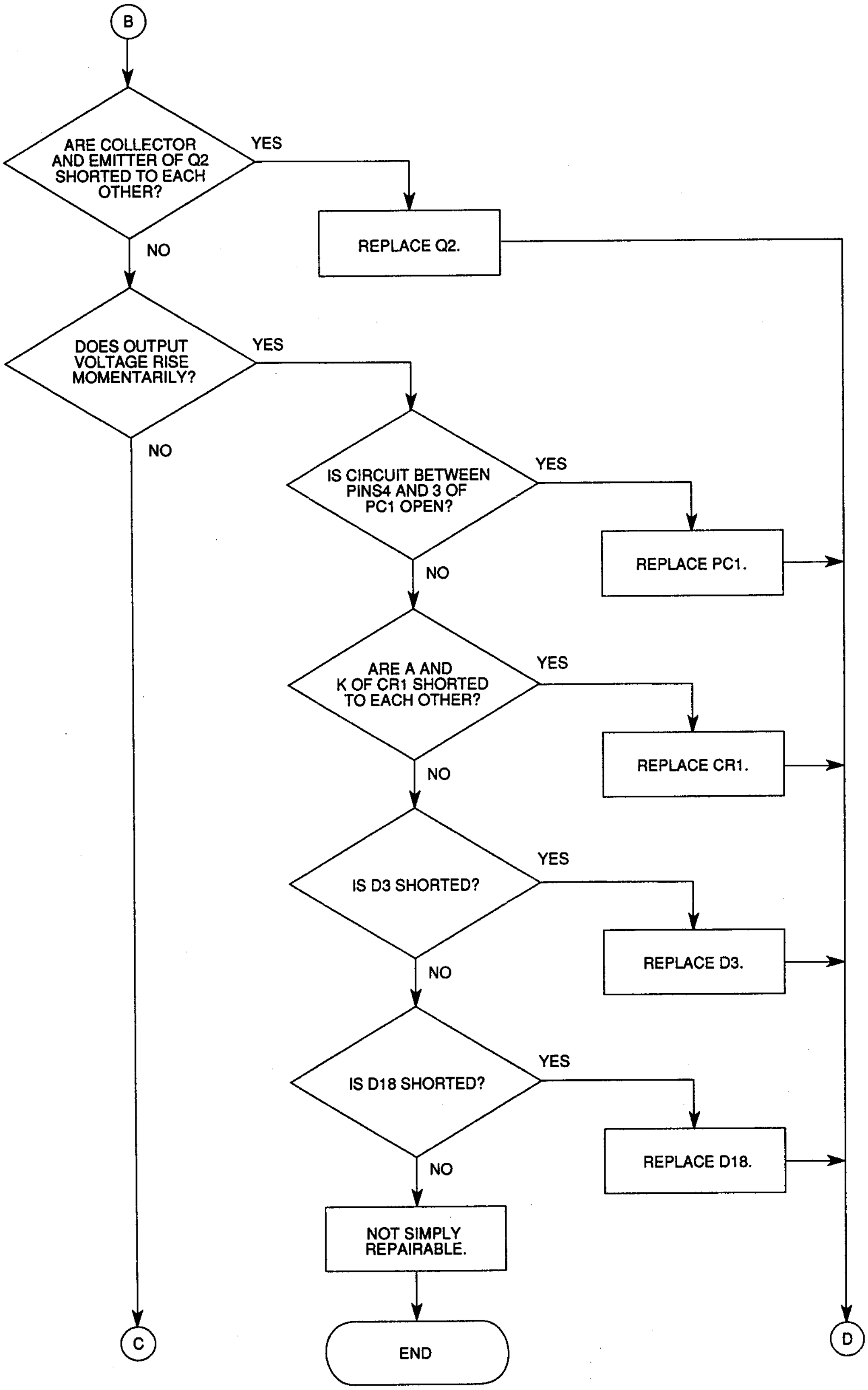

B
ARE COLLECTOR AND EMITTER OF Q2 SHORTED TO EACH OTHER?
YES
REPLACE Q2.
NO
DOES OUTPUT VOLTAGE RISE MOMENTARILY?
YES
NO
IS CIRCUIT BETWEEN PINS4 AND 3 OF PC1 OPEN?
YES
REPLACE PC1.
NO
ARE A AND K OF CR1 SHORTED TO EACH OTHER?
YES
REPLACE CR1.
NO
IS D3 SHORTED?
YES
REPLACE D3.
NO
IS D18 SHORTED?
YES
REPLACE D18.
NO
NOT SIMPLY REPAIRABLE.
C
END
D

Figure 2-15 PSD Power (B) or PSD Power (C) (GRP003) is faulty (3 of 4)

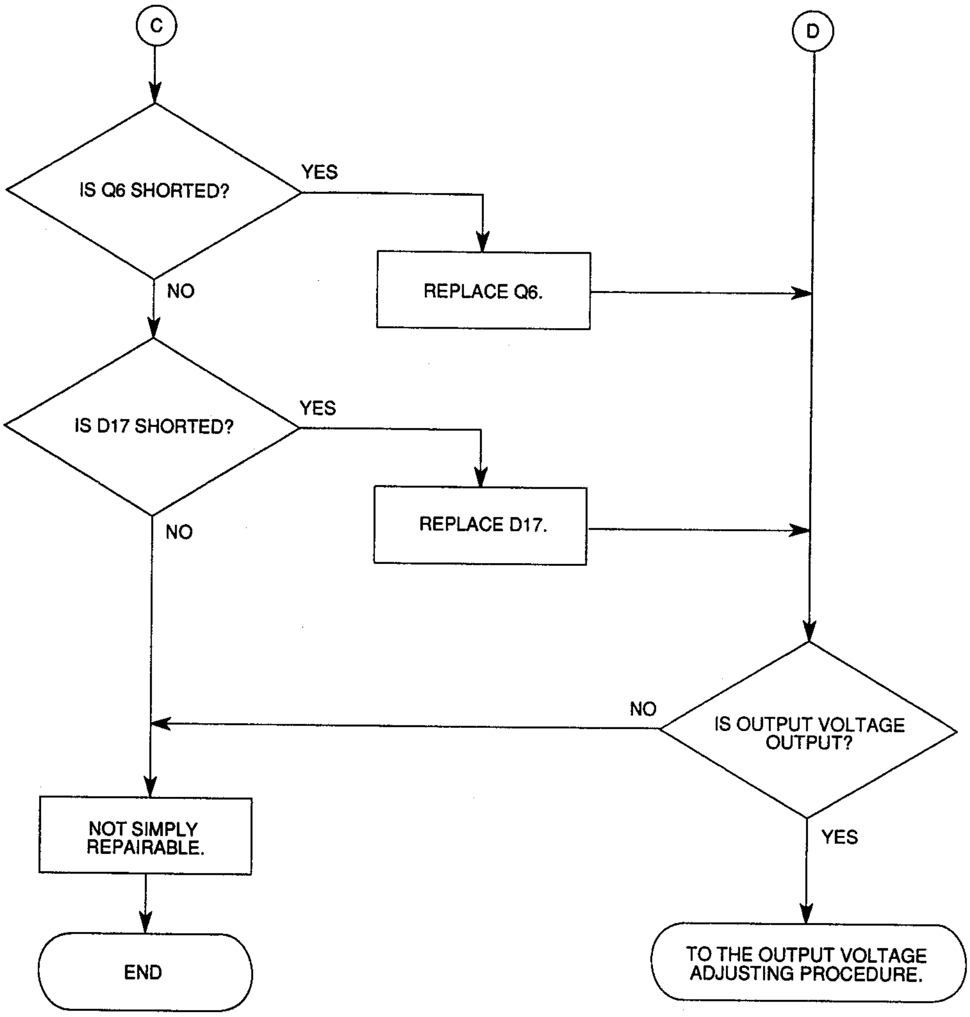

C
D
IS Q6 SHORTED?
YES
NO
REPLACE Q6.
IS D17 SHORTED?
YES
NO
REPLACE D17.
NO
IS OUTPUT VOLTAGE OUTPUT?
YES
NOT SIMPLY REPAIRABLE.
END
TO THE OUTPUT VOLTAGE ADJUSTING PROCEDURE.

Figure 2-15 PSD Power (B) or PSD Power (C) (GRP003) is faulty (4 of 4)

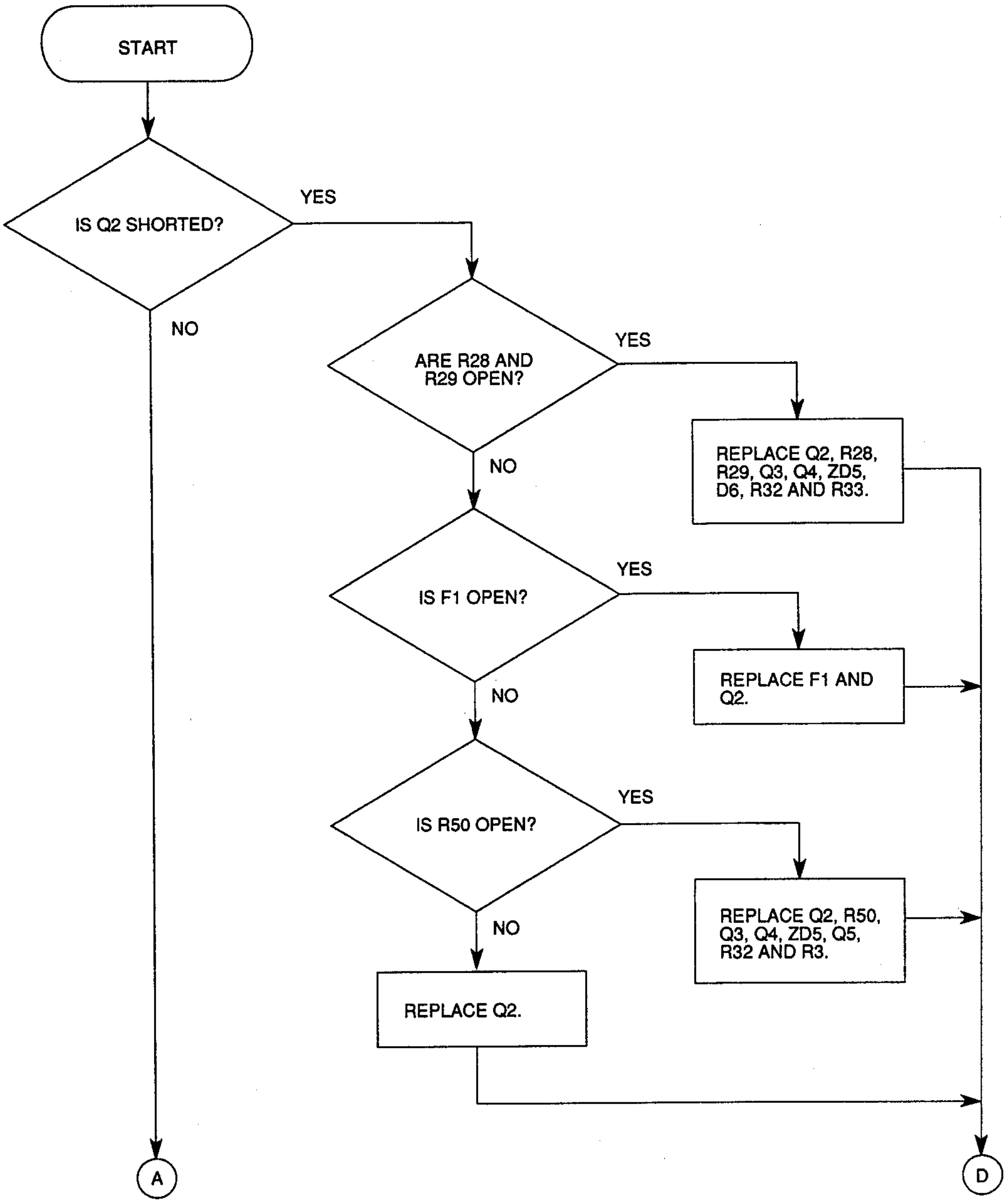

START
IS Q2 SHORTED?
YES
NO
ARE R28 AND R29 OPEN?
YES
REPLACE Q2, R28, R29, Q3, Q4, ZD5, D6, R32 AND R33.
NO
IS F1 OPEN?
YES
REPLACE F1 AND Q2.
NO
IS R50 OPEN?
YES
REPLACE Q2, R50, Q3, Q4, ZD5, Q5, R32 AND R3.
NO
REPLACE Q2.
A
D

Figure 2-16 PSD Power (C) (GRP303) is faulty (1 of 4)

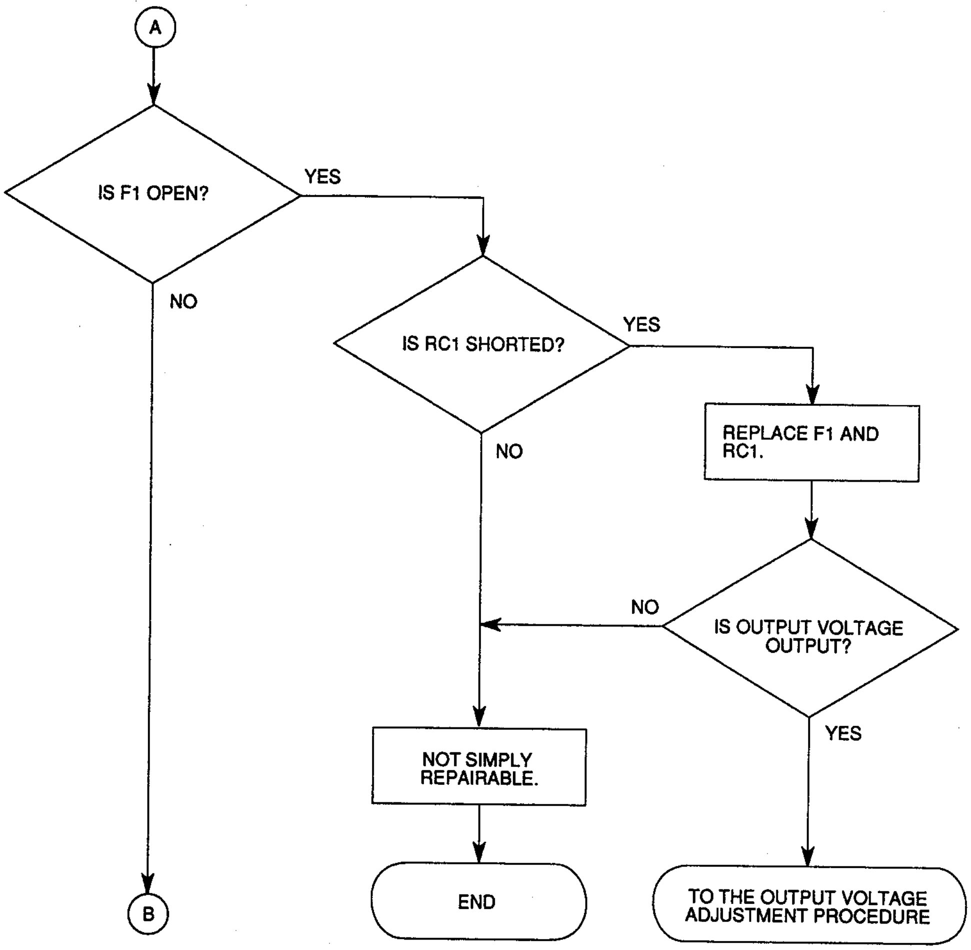

A
IS F1 OPEN?
YES
NO
IS RC1 SHORTED?
YES
NO
REPLACE F1 AND RC1.
NO
IS OUTPUT VOLTAGE OUTPUT?
YES
NOT SIMPLY REPAIRABLE.
END
TO THE OUTPUT VOLTAGE ADJUSTMENT PROCEDURE
B

Figure 2-16 PSD Power (C) (GRP303) is faulty (2 of 4)

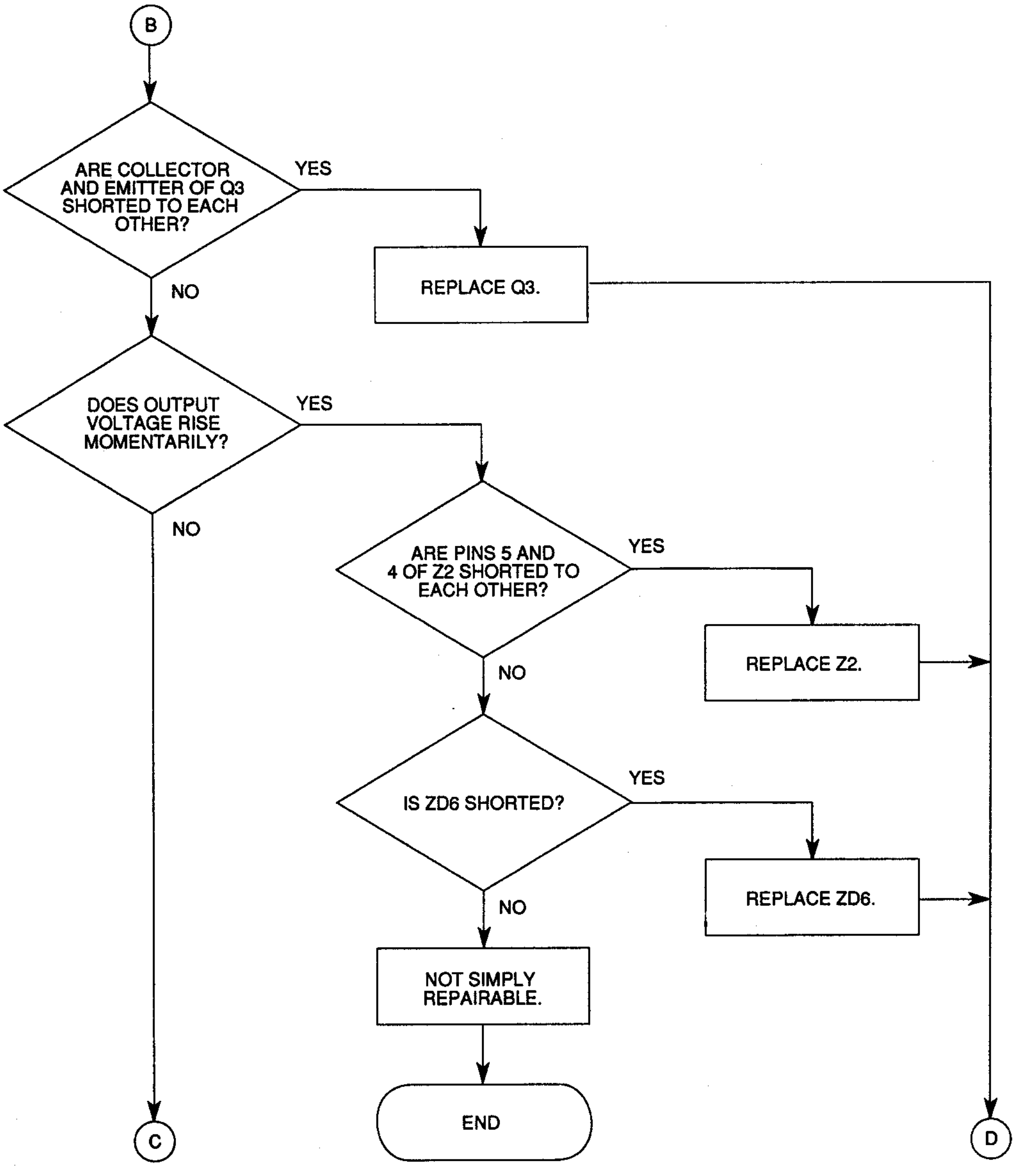

B
ARE COLLECTOR AND EMITTER OF Q3 SHORTED TO EACH OTHER?
YES
REPLACE Q3.
NO
DOES OUTPUT VOLTAGE RISE MOMENTARILY?
YES
NO
ARE PINS 5 AND 4 OF Z2 SHORTED TO EACH OTHER?
YES
REPLACE Z2.
NO
IS ZD6 SHORTED?
YES
REPLACE ZD6.
NO
NOT SIMPLY REPAIRABLE.
END
C
D

Figure 2-16 PSD Power (C) (GRP303) is faulty (3 of 4)

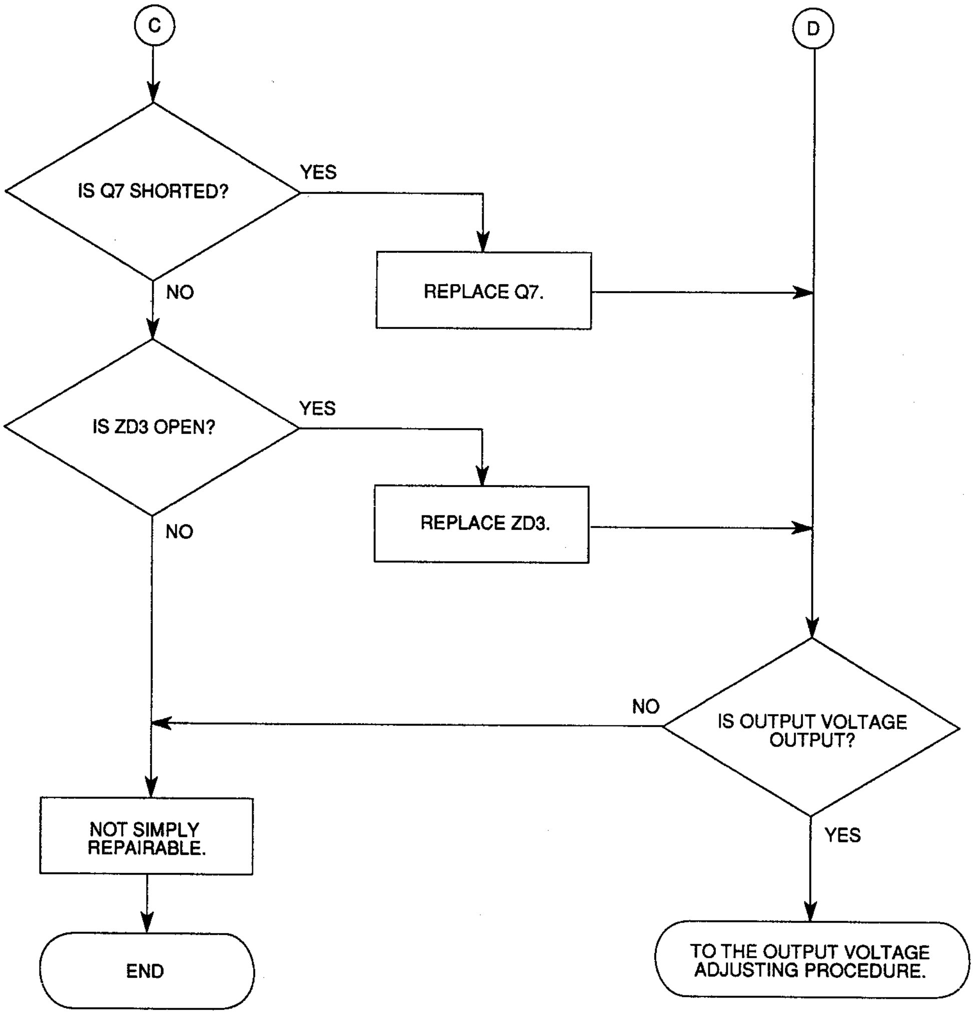
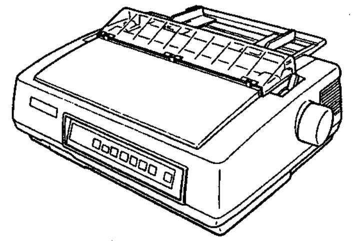

C
D
IS Q7 SHORTED?
YES
NO
REPLACE Q7.
IS ZD3 OPEN?
YES
NO
REPLACE ZD3.
IS OUTPUT VOLTAGE OUTPUT?
NO
YES
NOT SIMPLY REPAIRABLE.
END
TO THE OUTPUT VOLTAGE ADJUSTING PROCEDURE.

Figure 2-16 PSD Power (C) (GRP303) is faulty (4 of 4)

Section 3

Parts Removal and Installation



This section provides parts removal and installation procedures for the Pinwriter. Unless otherwise noted, install a part by simply reversing the removal procedure. Section 6 lists order numbers for replacement parts.

Observe the following rules when disassembling the Pinwriter.

- Turn off and unplug the printer.
- Remove paper handling options, such as a sheet feeder, that may be attached to the printer.
- Do not disassemble units into parts that are smaller than replacement units.
- Grasp a connector by its sides to remove it; do not pull on the wire harness that is attached to the connector.
- Perform the removal procedures in the sequence given.

WARNING

Always disconnect the power cord before performing any maintenance or adjustment procedure on the Pinwriter. Voltage is present inside the printer even after power is turned off. Only when the power cord is disconnected is all voltage removed.

The following tools are required to remove or install Pinwriter parts:

- #2 Phillips screwdriver
- Flat-blade screwdriver
- Round-nose pliers
- Tweezers
- Thickness gauge
- 14 mm nut driver

TOP COVER REMOVAL

Follow these steps to remove the top cover with the silent canopy.

1. Open the top cover with the silent canopy by lifting it toward you (see Figure 3-1).
2. Lift the left corner up and away from the printer.
3. Slide the right corner away from the printer and lift it straight up.

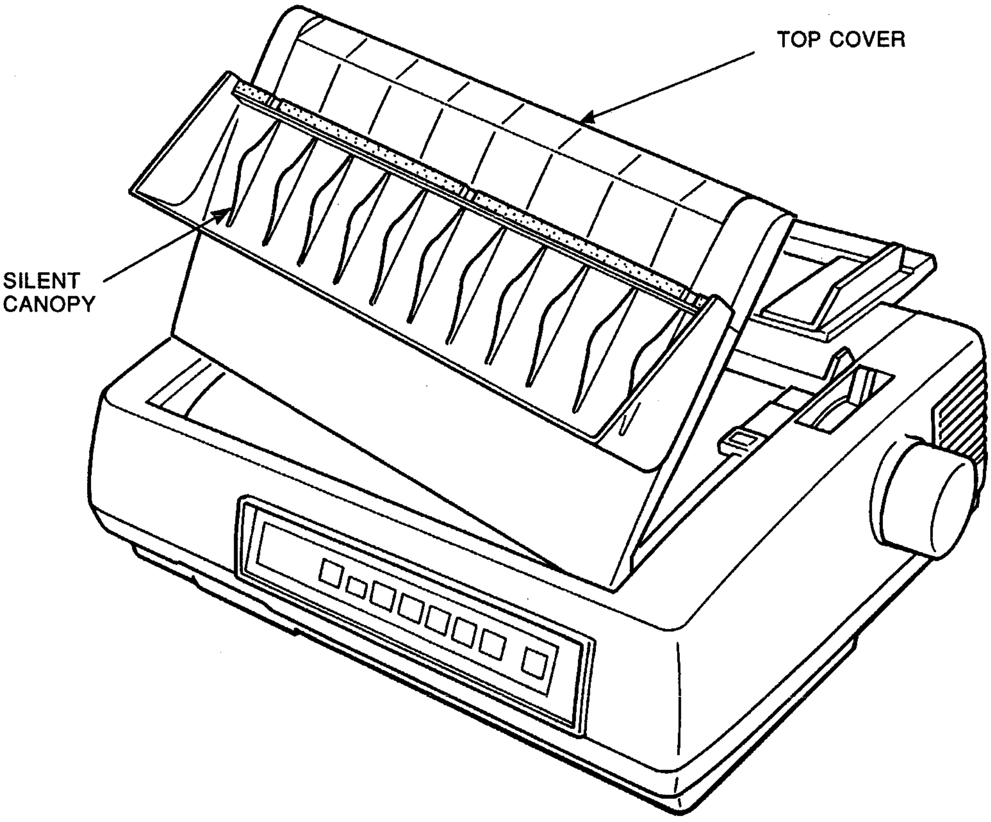


Figure 3-1 Top Cover

MIDDLE COVER ASSEMBLY REMOVAL

Remove any papar handling options and/or RS-232C interface board that may be installed. Then proceed as follows.

1. Pull off the platen knob.
2. Open the top cover and the rear cover.
3. Loosen the four screws on the middle cover (see Figure 3-2).
4. Lift up the middle cover and remove it from the printer.

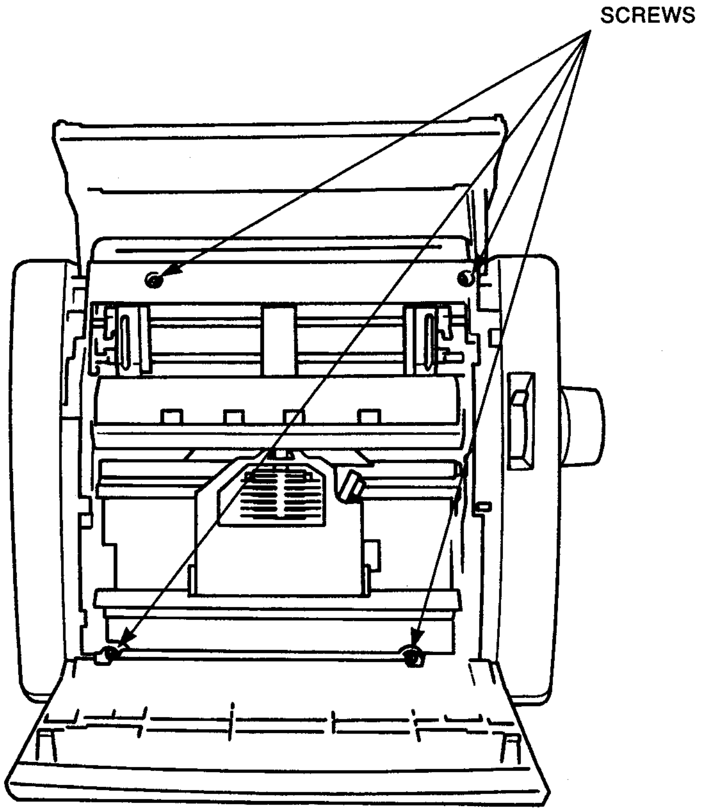


Figure 3-2 Middle Cover Assembly Removal

PRINT HEAD REMOVAL

1. Open the top cover, and remove the ribbon cartridge.
2. Open the bail roller guide (see Figure 3-3).
3. Move the carrier assembly to the center of the unit.
4. Unlock the clamp levers by pulling them outward (see Figure 3-4).
5. Lift up the print head (see Figure 3-5).

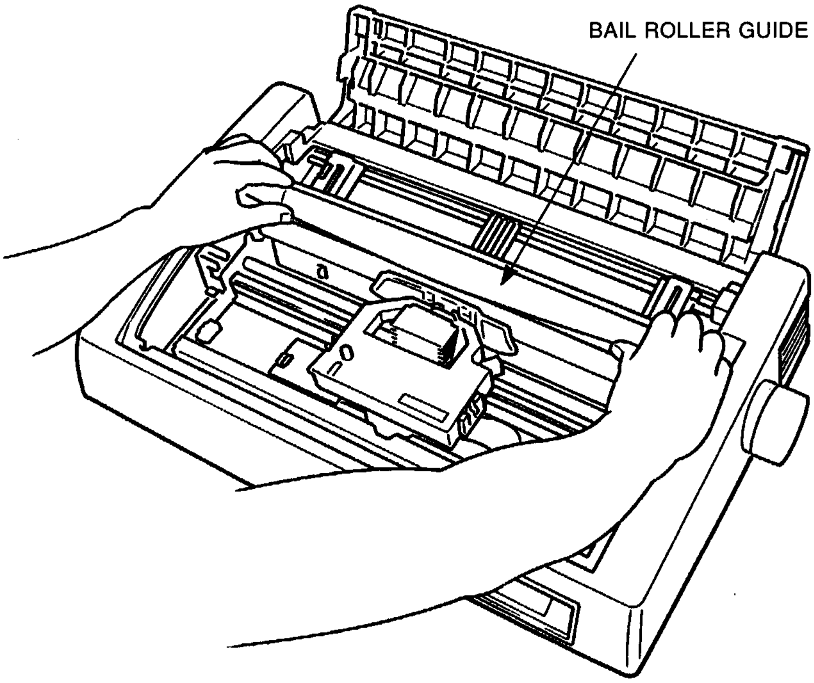


Figure 3-3 Bail Roller Guide

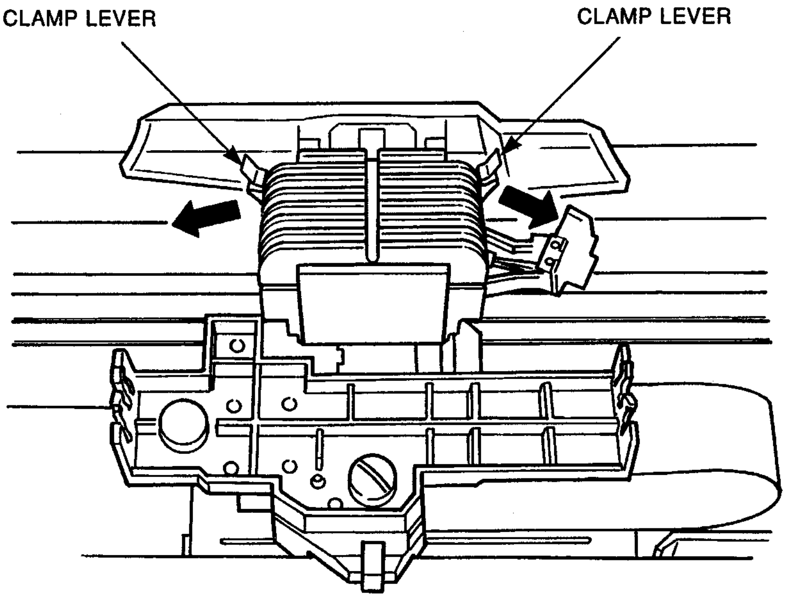

CLAMP LEVER
CLAMP LEVER

Figure 3-4 Clamp Lever Release

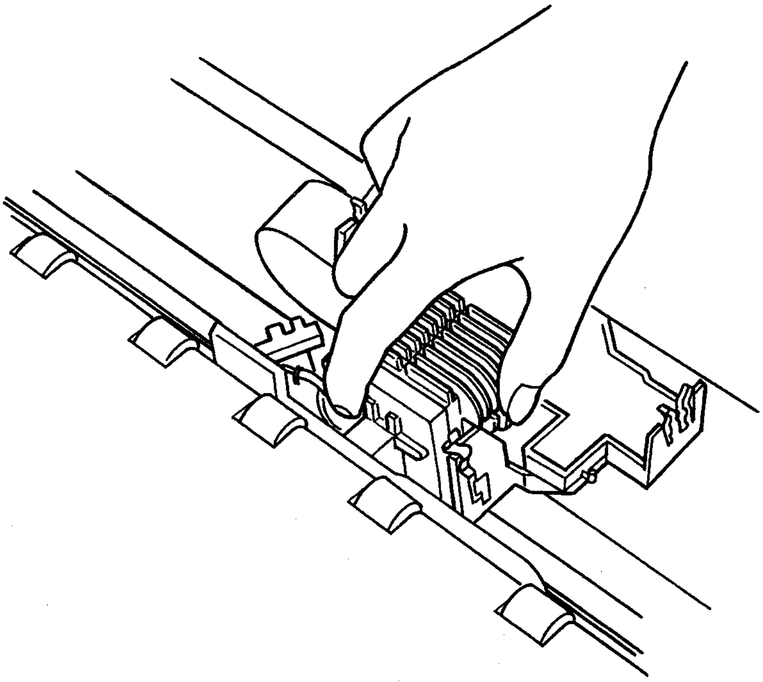


Figure 3-5 Print Head Removal

CARD HOLDER REMOVAL

To remove the card holder, first remove the print head. Then proceed as follows.

1. Open the bail roller guide.
2. Pull the plastic tabs at the bottom of the card holder together, and remove the card holder (see Figure 3-6).

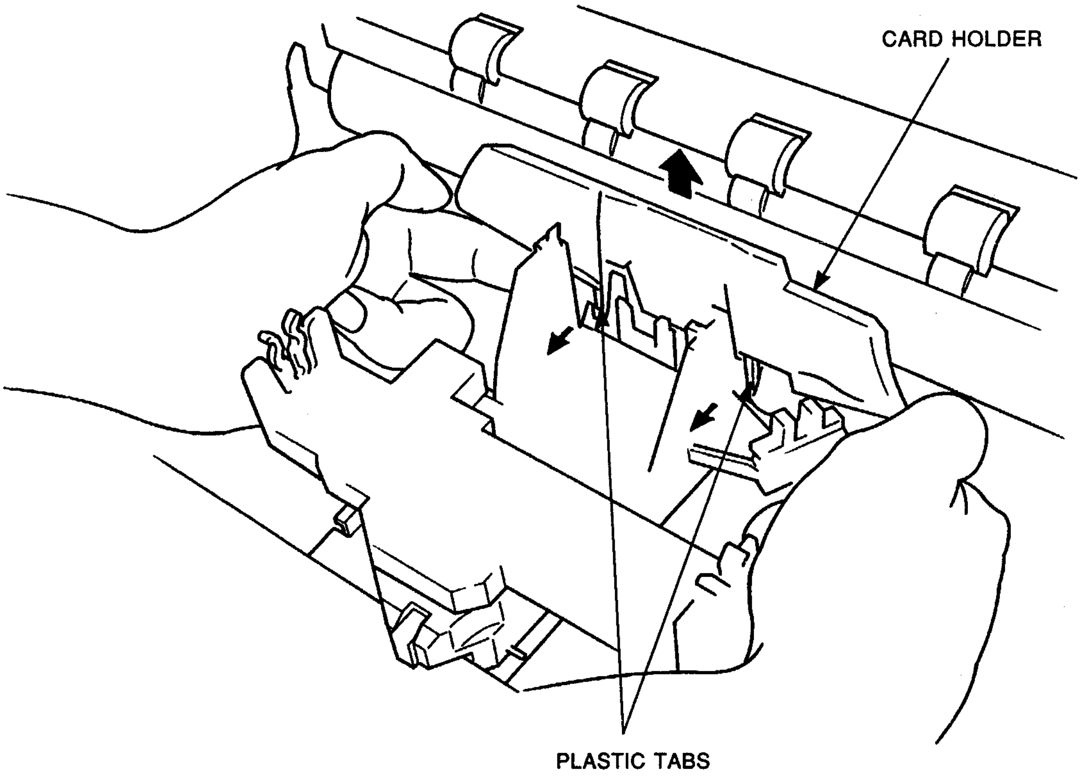


Figure 3-6 Card Holder Removal

RIBBON BASE REMOVAL

To remove the ribbon base, first remove the print head. Then proceed as follows.

1. Unlock the ribbon base by turning the fastener counterclockwise with coin (see Figure 3-7).
2. Remove the base by lifting it up.

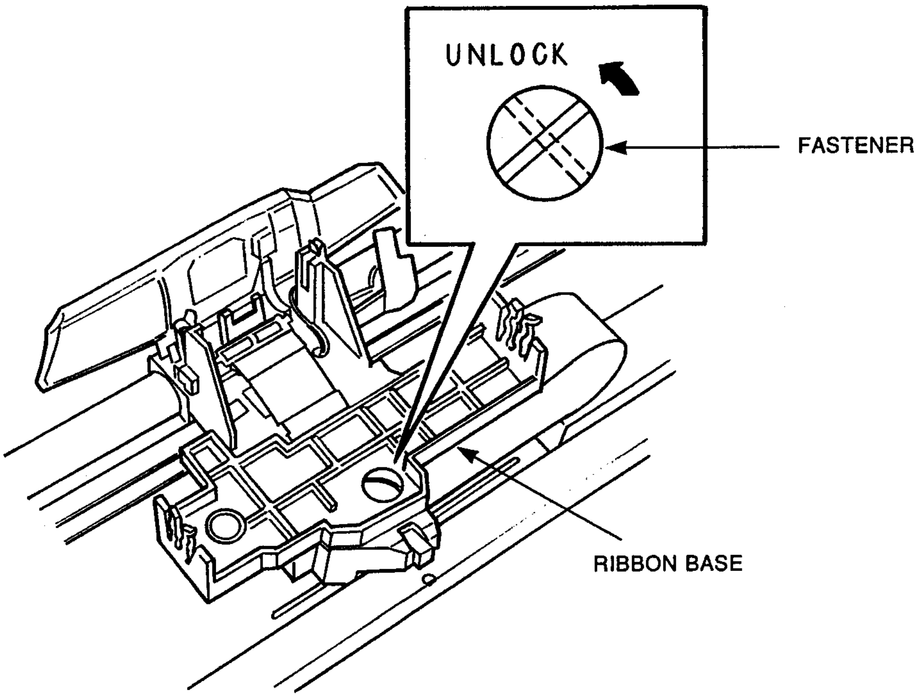


Figure 3-7 Ribbon Base Removal

CARRIER CABLE ASSEMBLY REMOVAL

To remove the carrier cable assembly which consists of two carrier cables and one color cable, first remove the ribbon base. Then proceed as follows.

1. Move the carrier to the right side of the printer.
2. Lift off the carrier cable cover by unlocking the tab (see Figure 3-8).
3. Pull up both ends of the connector locks CN14 through CN16 (see Figure 3-9).
4. Remove the cables from the unlocked connectors.
5. Release the cable from the three cable clamps on the carrier (see Figure 3-10).
6. With a screwdriver blade, press the two locking tabs out as far as possible to release the connector from the carrier and lift the connector out of the printer (see Figure 3-11).
7. Pull up both ends of the color cable connector lock and remove the color cable from the unlocked connector. (see Figure 3-12).

CAUTION

Do not press the tab more than necessary. Excessive force may cause damage.

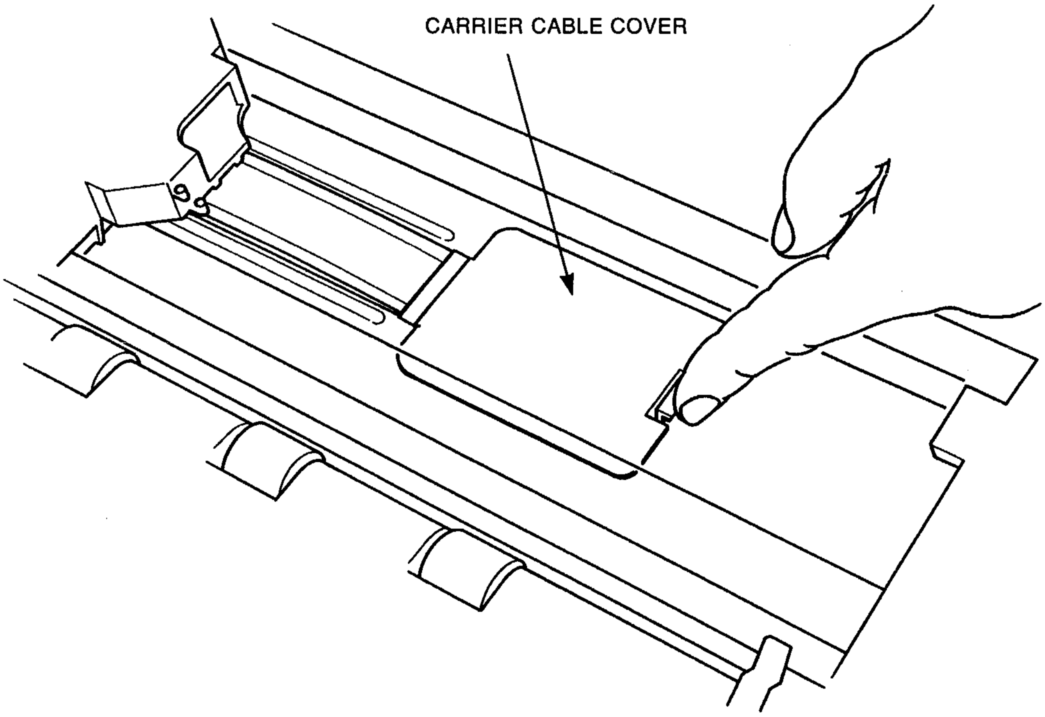


Figure 3-8 Carrier Cable

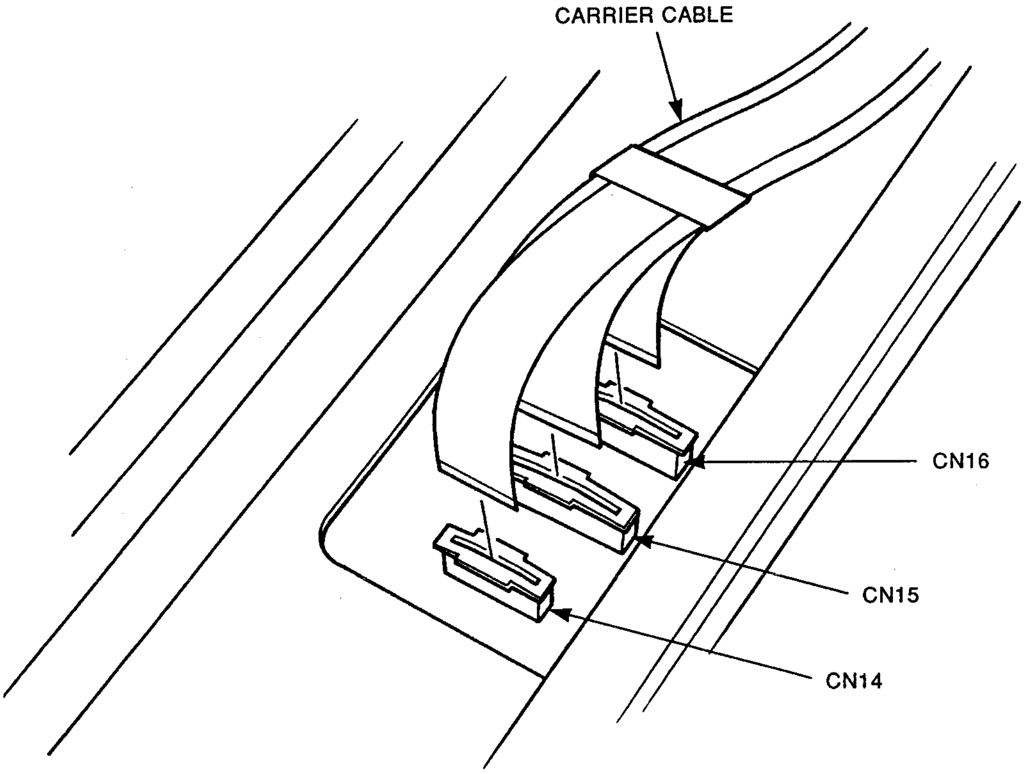

CARRIER CABLE
CN16
CN15
CN14

Figure 3-9 Carrier Cable Connector

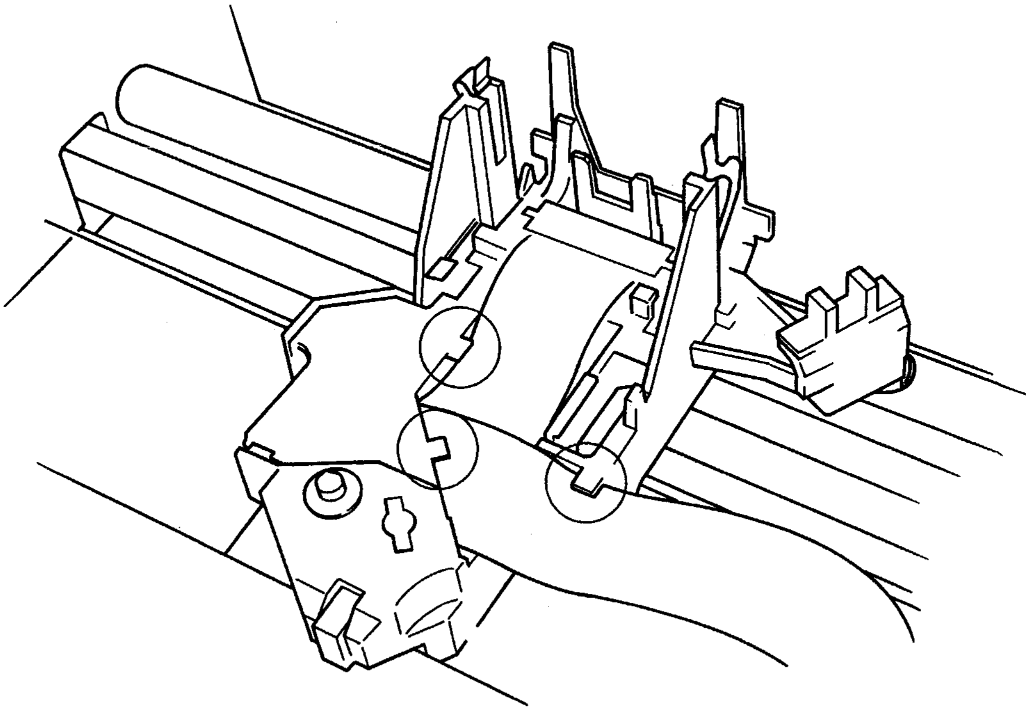


Figure 3-10 Cable Clamps

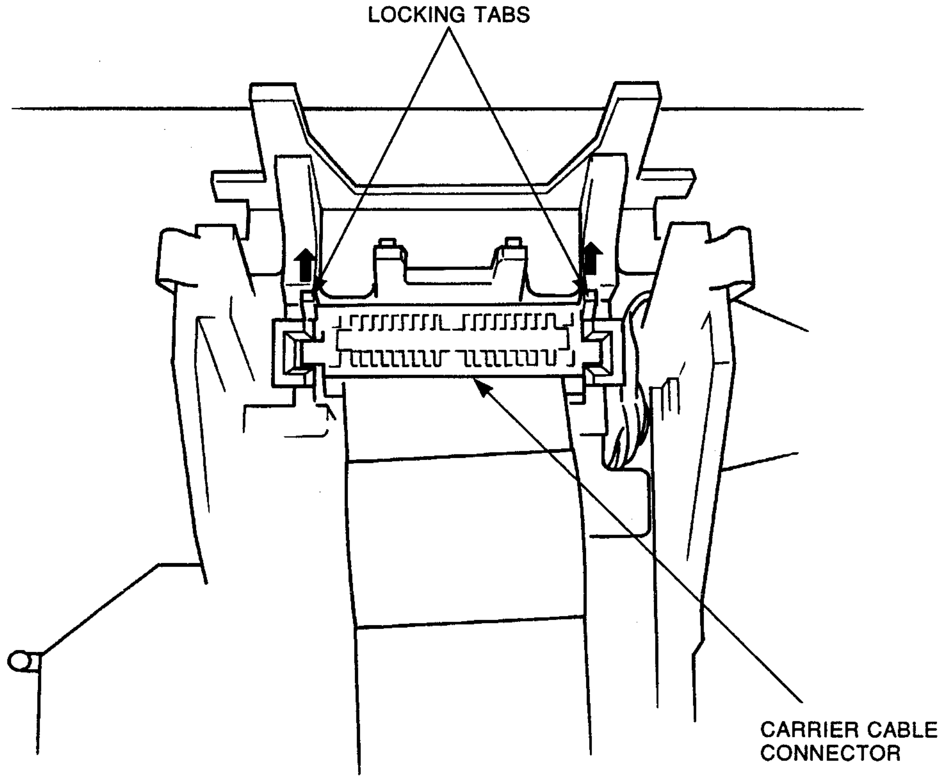

LOCKING TABS
CARRIER CABLE CONNECTOR

Figure 3-11 Carrier Cable Connector

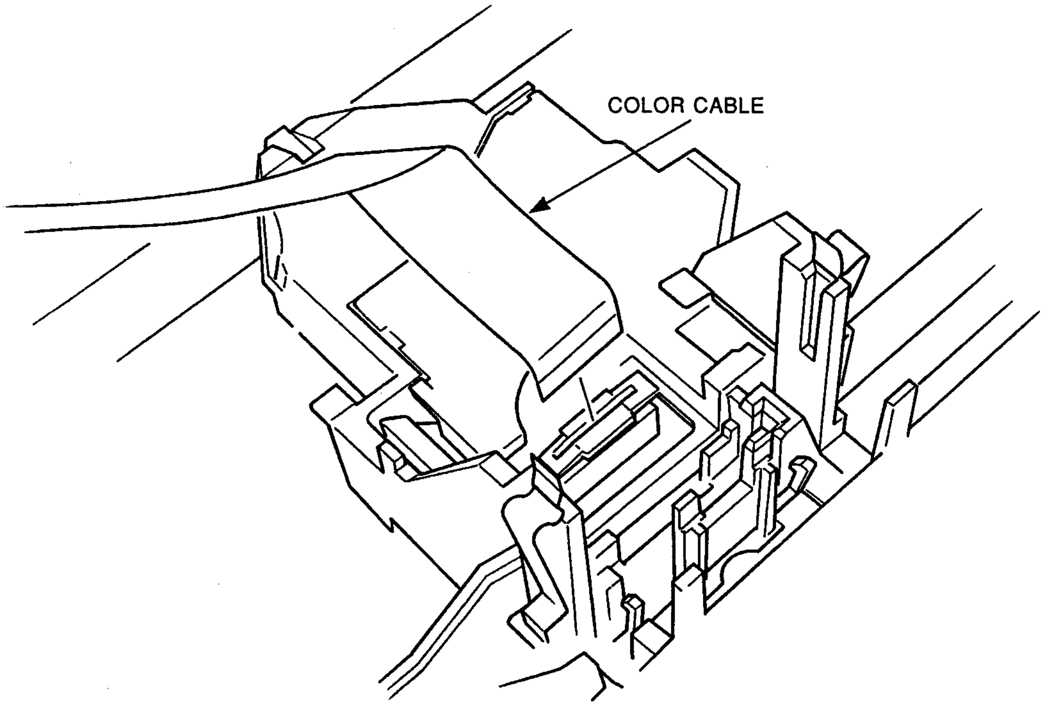

COLOR CABLE

Figure 3-12 Color Cable Removal

COLOR CABLE REMOVAL

To remove the color cable, first remove the carrier cable. Then proceed as follows.

1. Pull up both ends of the color cable connector lock (see Figure 3-13).
2. Remove the color cable from the unlocked connector (see Figure 3-13).

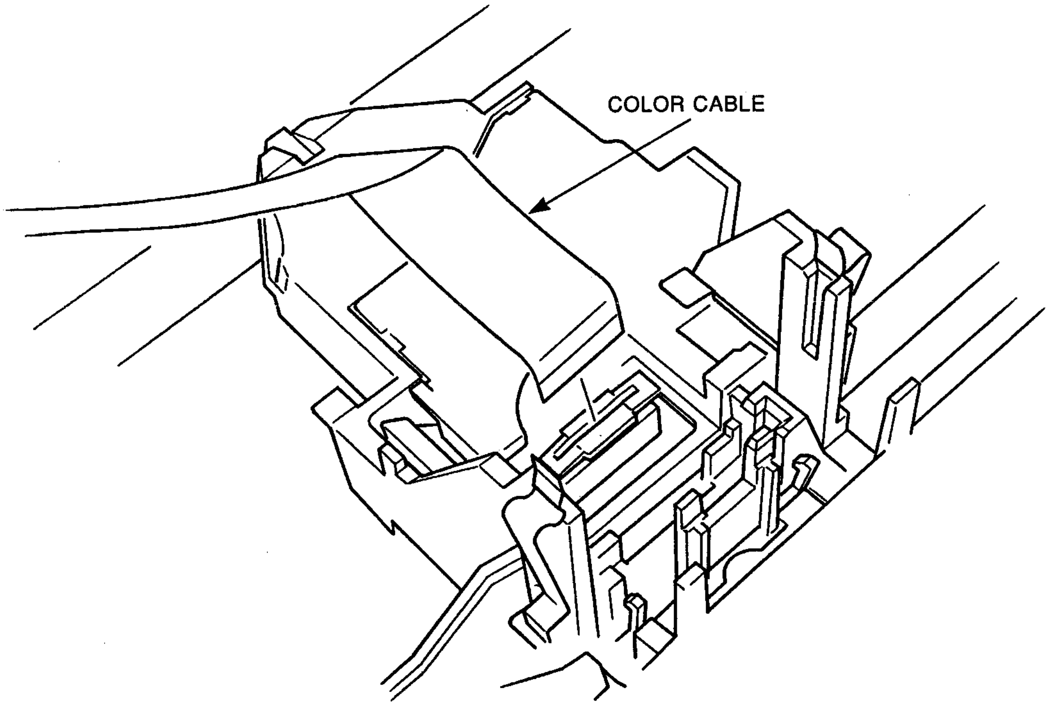


Figure 3-13 Color Cable Removal

RIBBON SENSOR ASSEMBLY REMOVAL

To remove the ribbon sensor assembly, first remove the carrier cable assembly. Then proceed as follows.

1. With a screwdriver blade, unlock the three locking tabs and lift the carrier frame cover. (see Figure 3-14).
2. With a screwdriver blade, unlock the two locking tabs and lift the carrier connector PCB out of the carrier (see Figure 3-15).
3. Release the sensor cable from the cable clamp on the carrier (see Figure 3-16).
4. With a screwdriver blade, unlock the sensor clamp plate and remove it.
5. Lift up the ribbon end sensor.
6. Unlock the locking tab and remove the microswitch by turning it counterclockwise (see Figure 3-16).

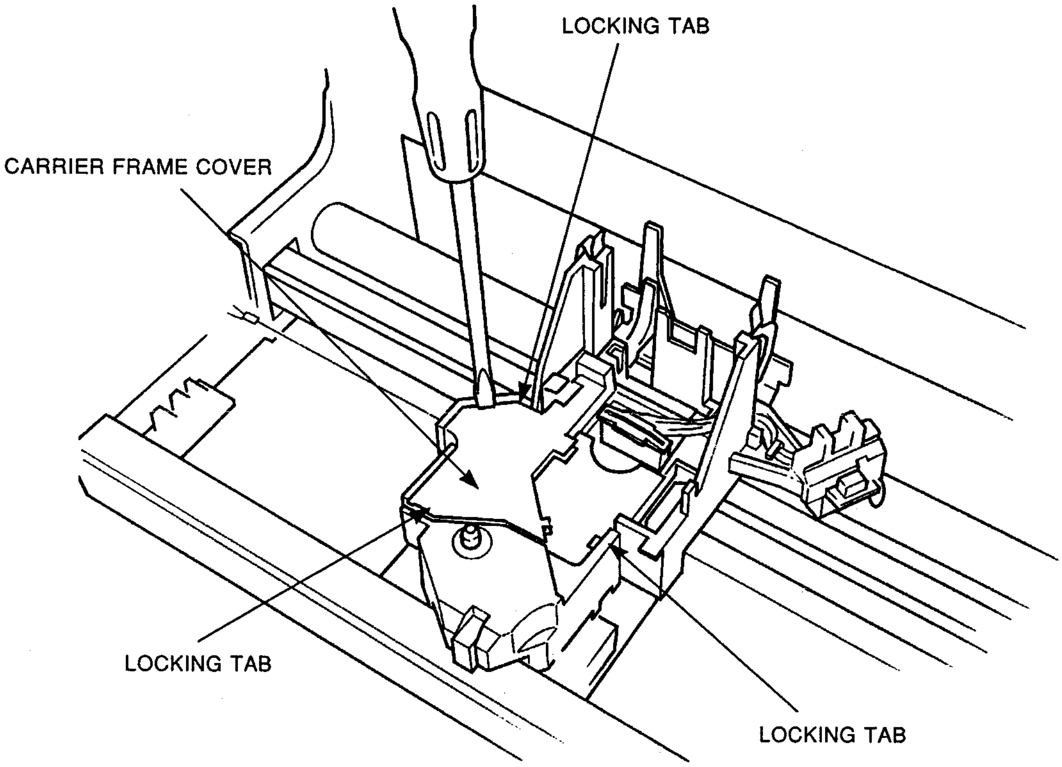


Figure 3-14 Carrier Frame Cover

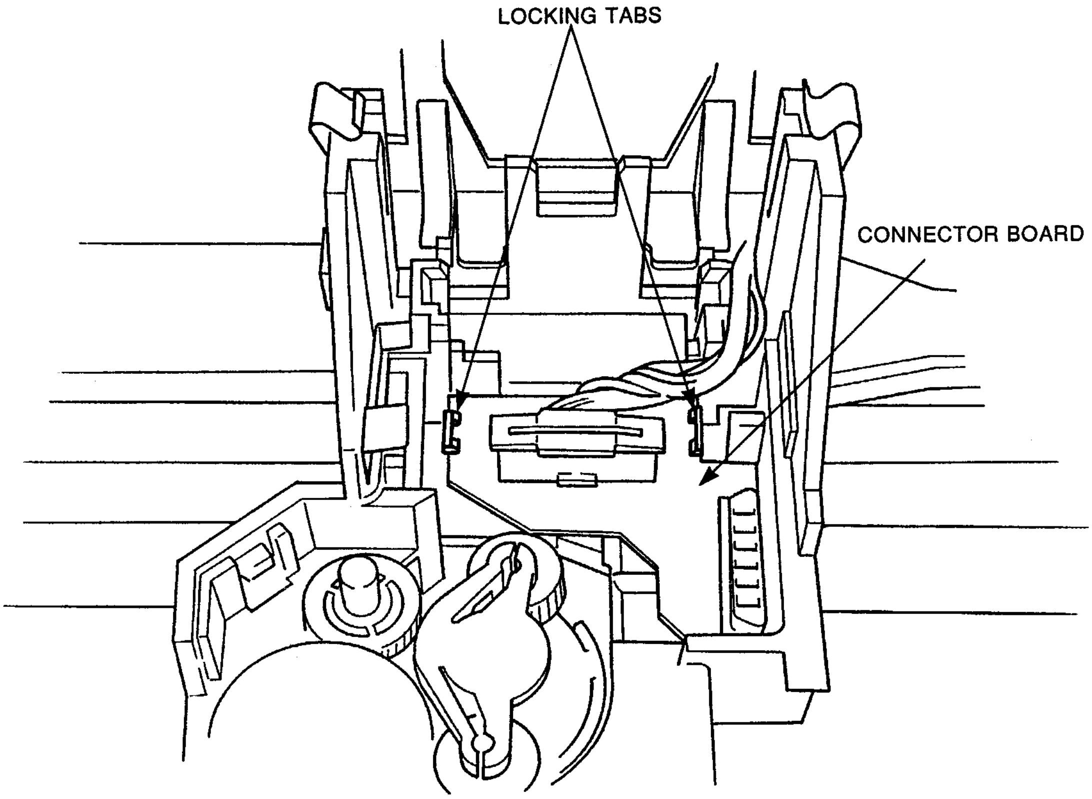

LOCKING TABS
CONNECTOR BOARD

Figure 3-15 Connector Board

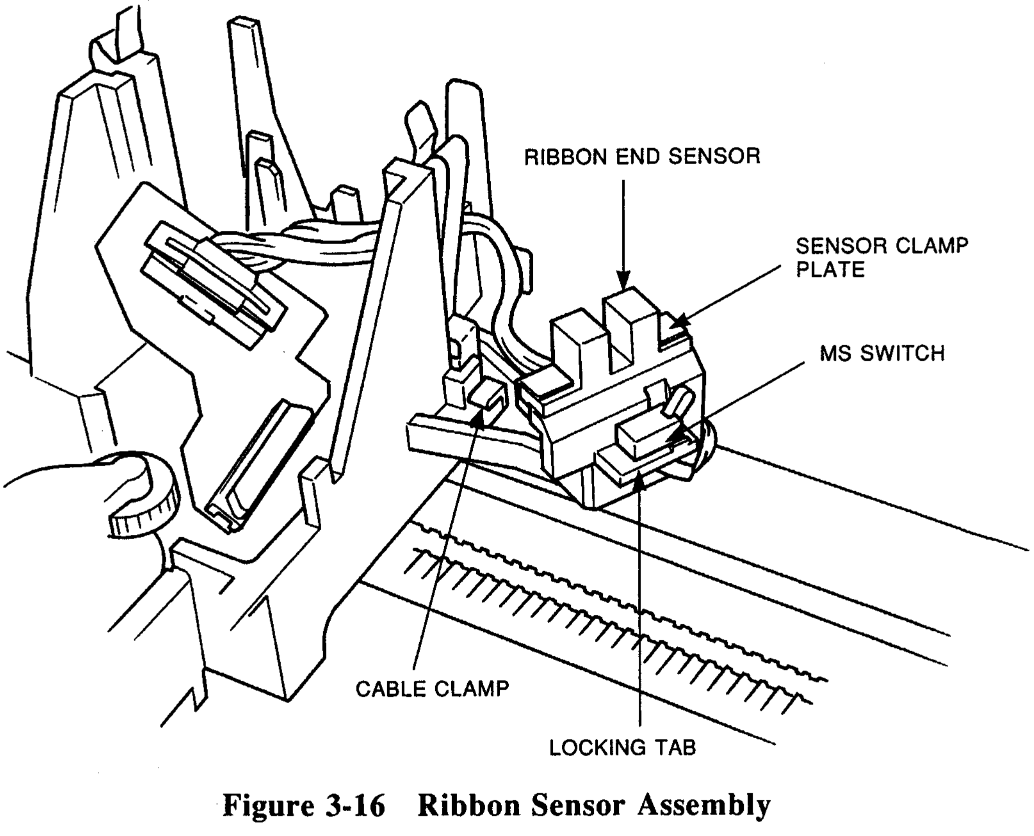

RIBBON END SENSOR
SENSOR CLAMP PLATE
MS SWITCH
CABLE CLAMP
LOCKING TAB

Figure 3-16 Ribbon Sensor Assembly

COPY CONTROL LEVER REMOVAL

To remove the copy control lever, first remove the middle cover assembly.

1. Remove the screw securing the copy control lever to the guide shaft and remove the lever (see Figure 3-17).

NOTE

When replacing the copy control lever, see Section 4 for the platen gap and card holder adjustment procedures.

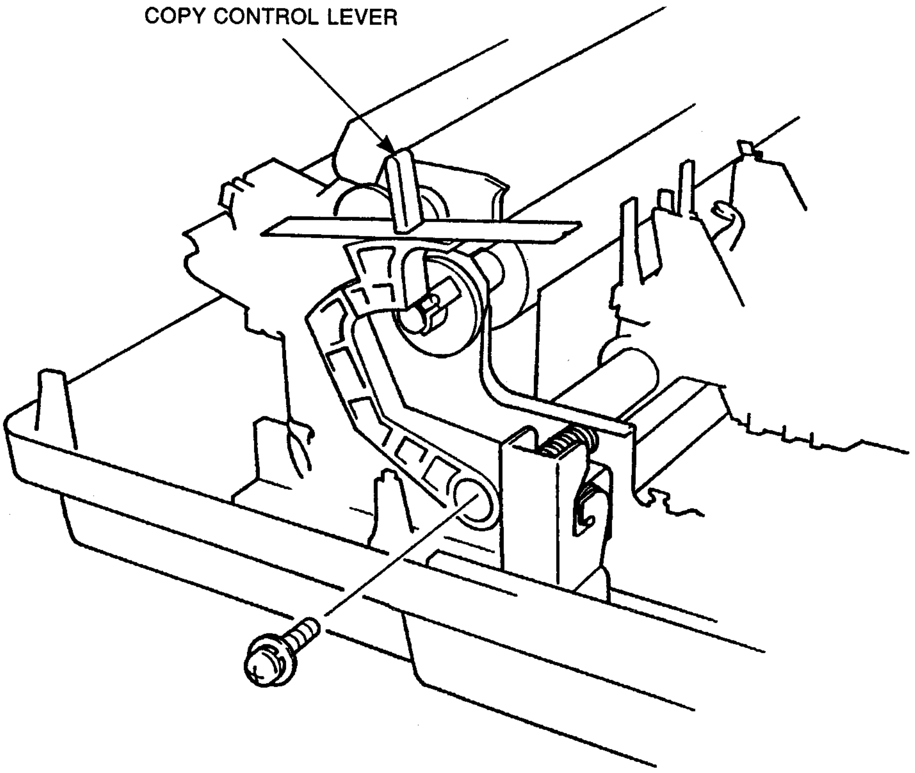


Figure 3-17 Copy Control Lever

TIMING BELT REMOVAL

To remove the timing belt, first remove the carrier cable and the color cable. Then proceed as follows.

1. Remove the carrier frame cover.
2. With a screwdriver blade, unlock the two locking tabs and lift the connector board out of the carrier (see Figure 3-18).
3. With a screwdriver blade, unlock the locking tab and lift the belt holder out of the carrier (see Figure 3-19).
4. Release the timing belt from the carrier by pulling the belt forward.
5. Press the tension arm assembly to the left side frame and remove the timing belt from the SP motor pulley (see Figure 3-20).
6. Remove the driven pulley assembly from the tension arm (see Figure 3-21).
7. Remove the timing belt from the driven pulley assembly (see Figure 3-21).

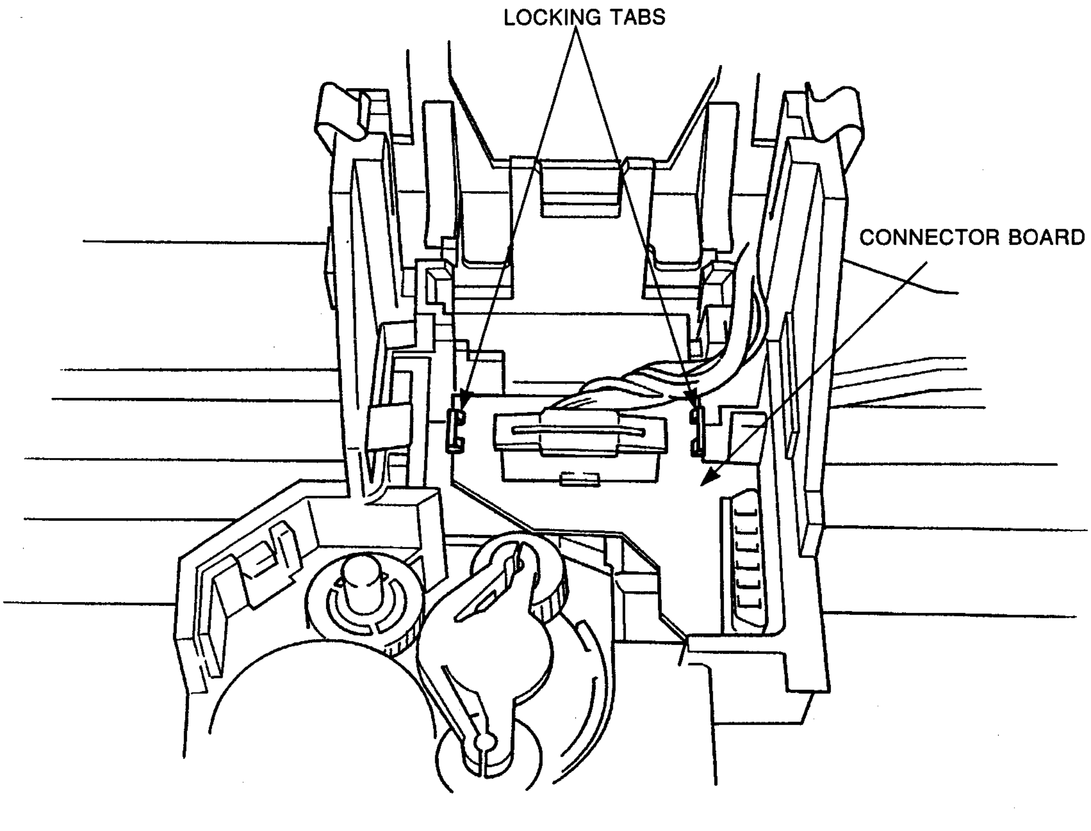


Figure 3-18 Connector Board

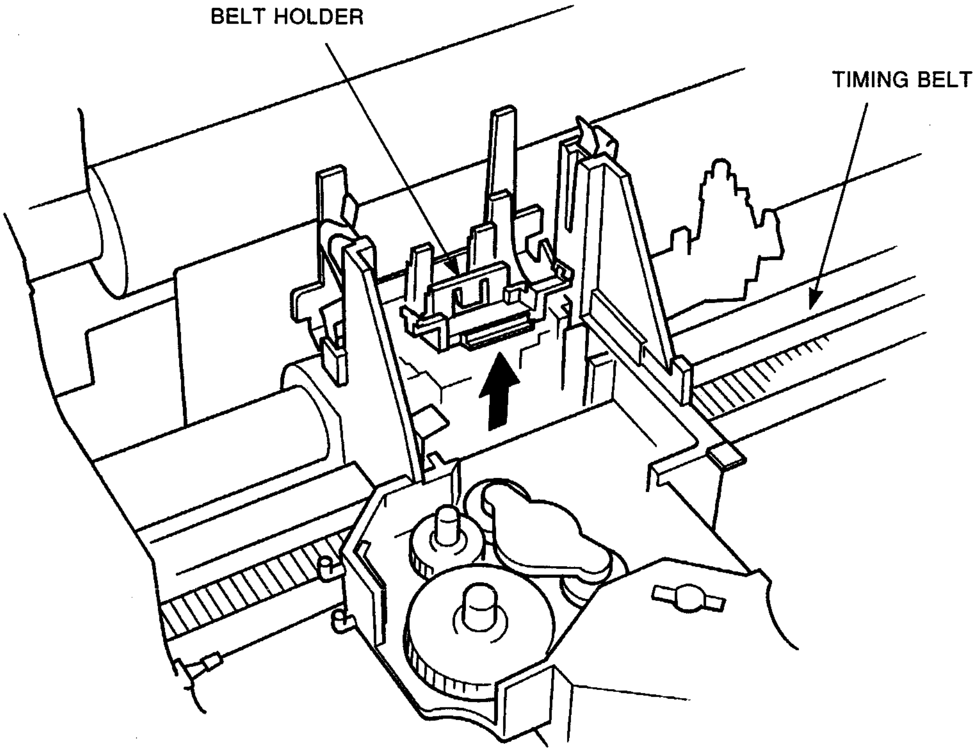

BELT HOLDER
TIMING BELT

Figure 3-19 Belt Holder

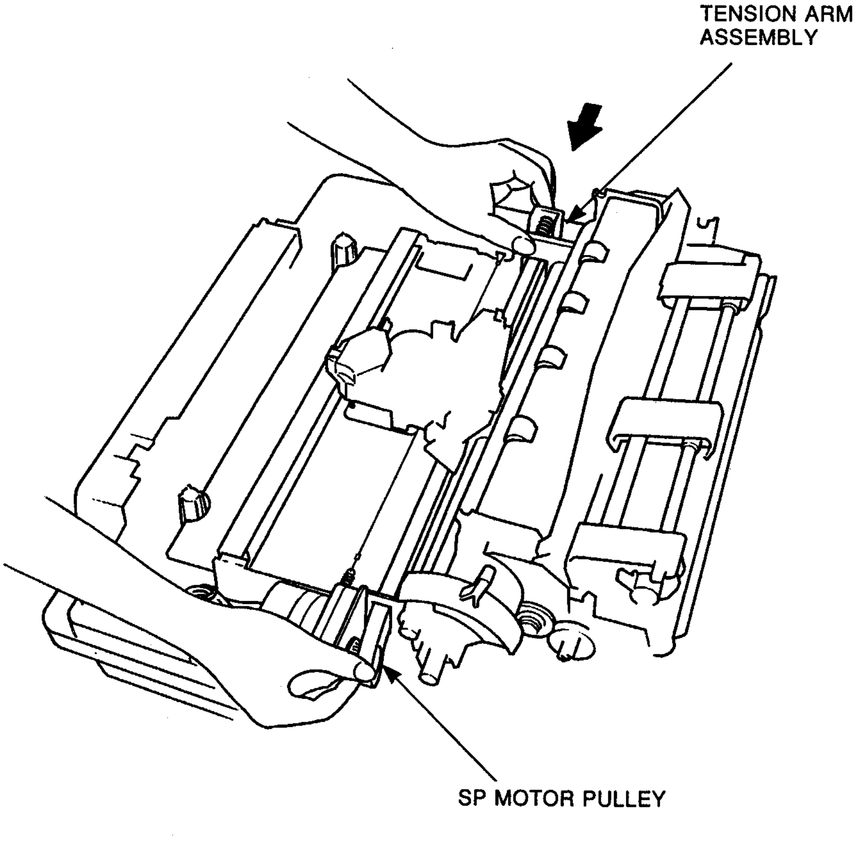

TENSION ARM
ASSEMBLY
SP MOTOR PULLEY

Figure 3-20 Timing Belt

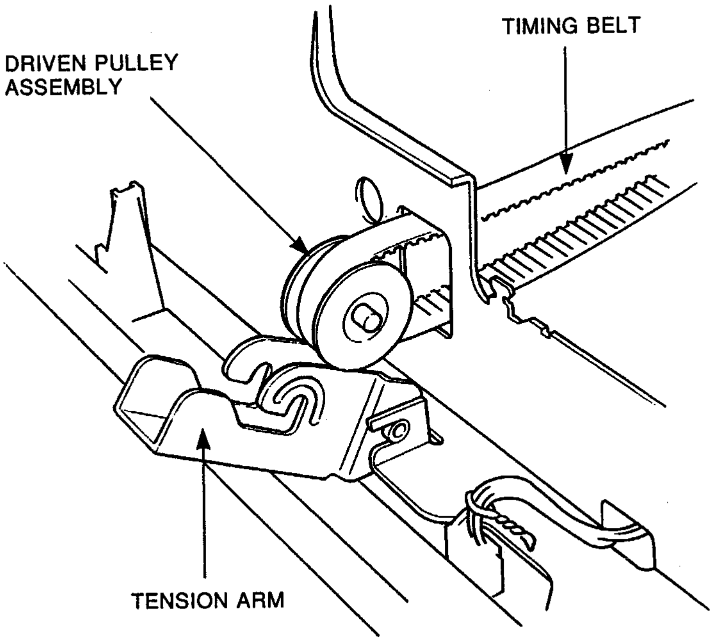

DRIVEN PULLEY ASSEMBLY
TIMING BELT
TENSION ARM

Figure 3-21 Driven Pulley Assembly

CARRIER ASSEMBLY REMOVAL

To remove the carrier assembly, first remove the card holder assembly, gap adjust lever, carrier cable assembly and timing belt. Then proceed as follows.

1. Turn the eccentric bushing until the tab on the bushing aligns with the slot on the right side frame (see Figure 3-22).
2. Slide the guide shaft to the right and remove the eccentric bushing.
3. Remove the ribbon feed wire from the left side frame and the spring.
4. Remove the front stay by removing the four mounting screws (see Figure 3-22).
5. Lift the carrier assembly with guide shaft up and out of the printer.

NOTE

When replacing the carrier assembly, see Section 4 for the platen gap and card holder adjustment procedure.

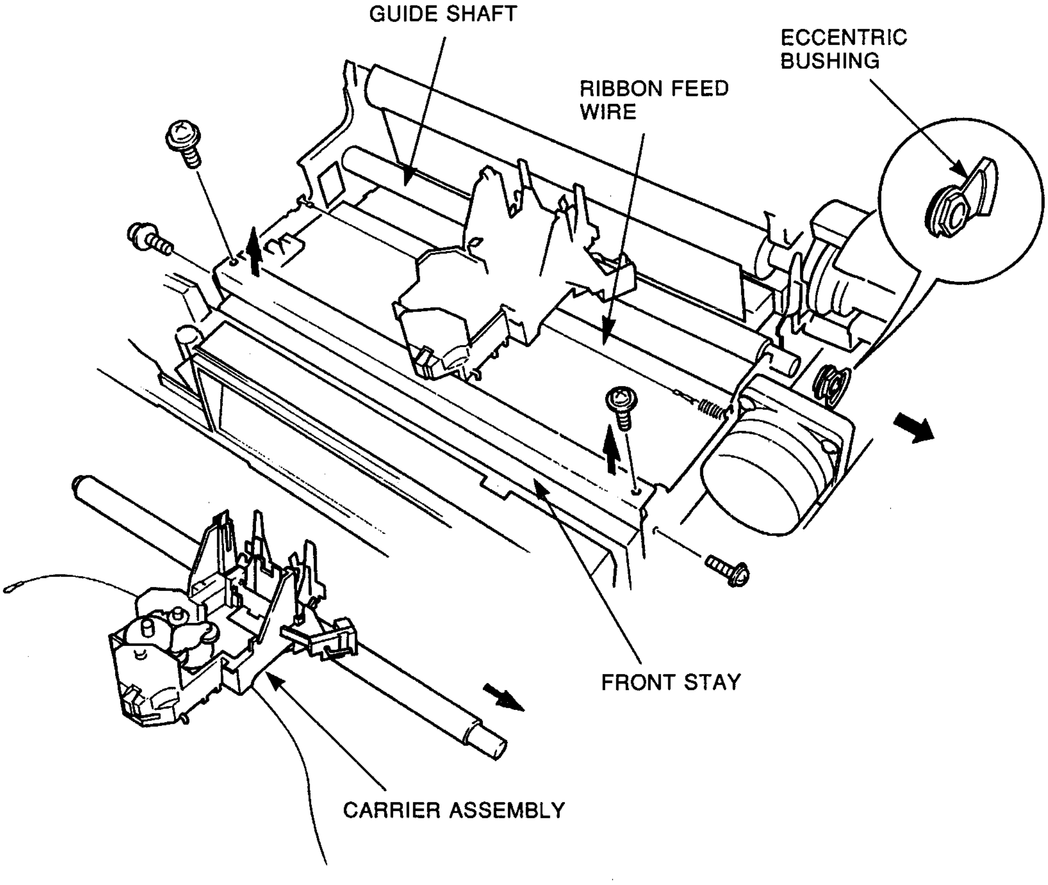


Figure 3-22 Carrier Assembly

DRIVEN PULLEY ASSEMBLY REMOVAL

To remove the driven pulley assembly, first remove the middle cover assembly and timing belt. Then proceed as follows.

1. Press the tension arm assembly to the left side frame and remove the timing belt from the SP motor pulley (see Figure 3-23).
2. Remove the driven pulley assembly from the tension arm (see Figure 3-24).
3. Remove the timing belt from the driven pulley assembly (see Figure 3-24).
4. Remove the driven bushing from the driven pulley.

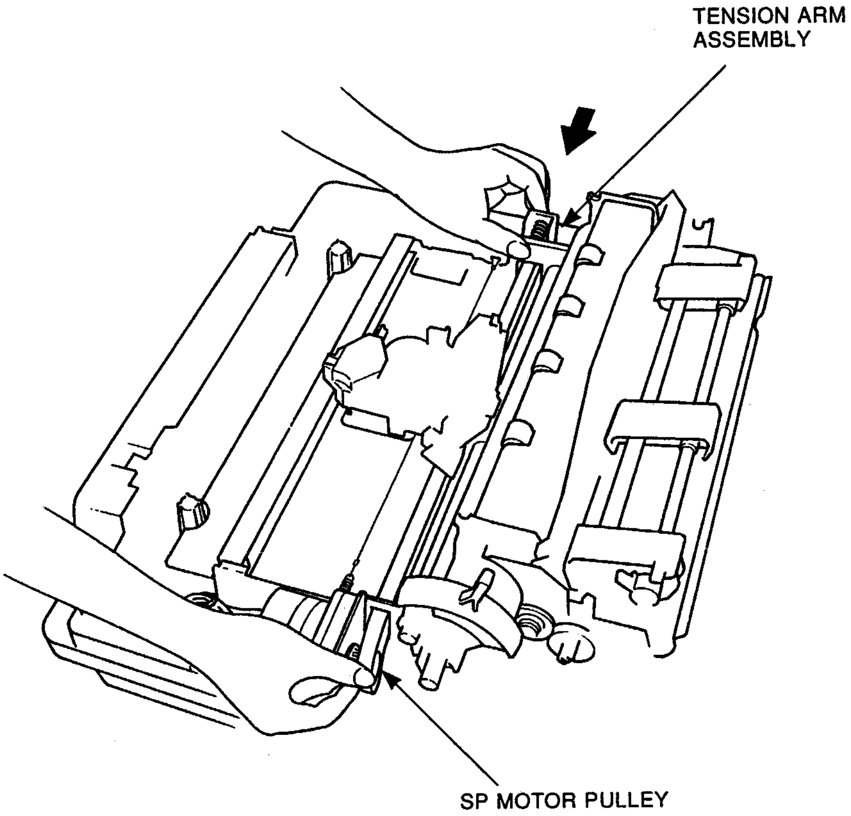


Figure 3-23 Timing Belt

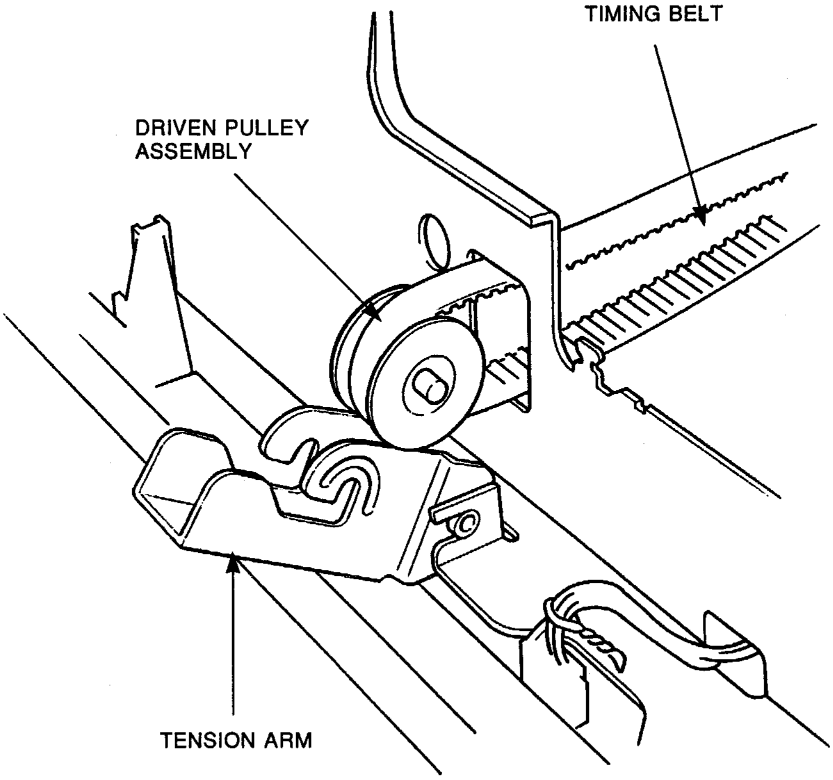

TIMING BELT
DRIVEN PULLEY ASSEMBLY
TENSION ARM

Figure 3-24 Driven Pulley Assembly

HP SENSOR ASSEMBLY REMOVAL

To remove the HP sensor assembly, first remove the middle cover assembly. Then proceed as follows.

1. Disconnect CN42 from the connection board (see Figure 3-25).
2. Unlock the locking tab of the HP sensor holder and lift up and slide to the left side frame to remove it (see Figure 3-26).

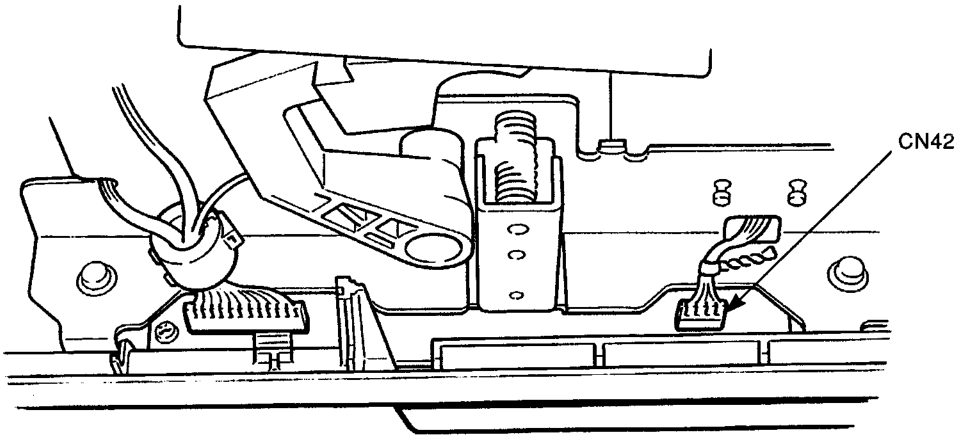


Figure 3-25 HP Sensor Connector

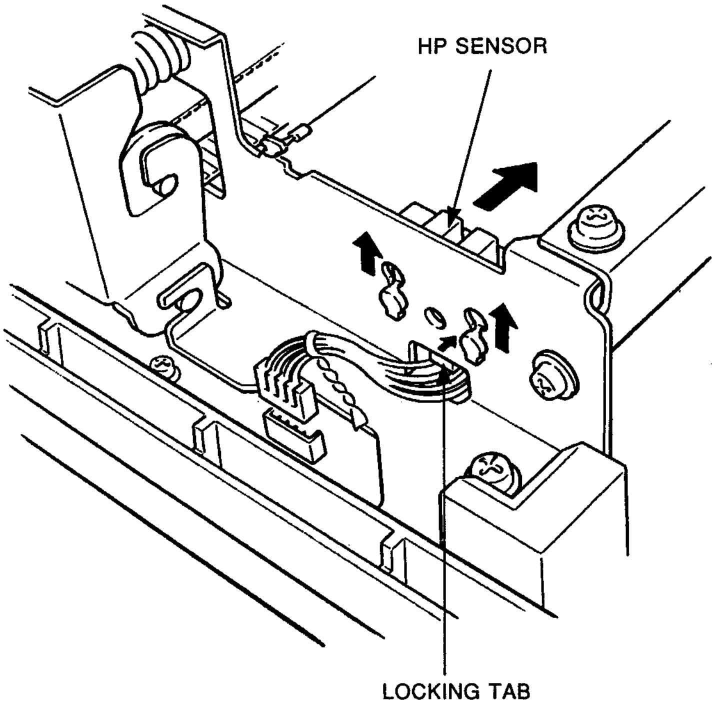


Figure 3-26 HP Sensor

SENSOR AND SWITCH ASSEMBLY REMOVAL

To remove the sensor and switch assembly, first remove the middle cover assembly. Then proceed as follows.

1. Disconnect CN44 from the connection board (see Figure 3-27).
2. Remove the PF sensor by removing the screw securing it to the left side frame (see Figure 3-28).

NOTE

When replacing the PF sensor, see Section 4 for the PF sensor adjustment procedures.

3. Remove the option sensor bracket by removing the screw securing it to the left side frame (see Figure 3-29).
4. Remove the MDL sensor bracket by removing the two screws securing it to the main stay (see Figure 3-30).

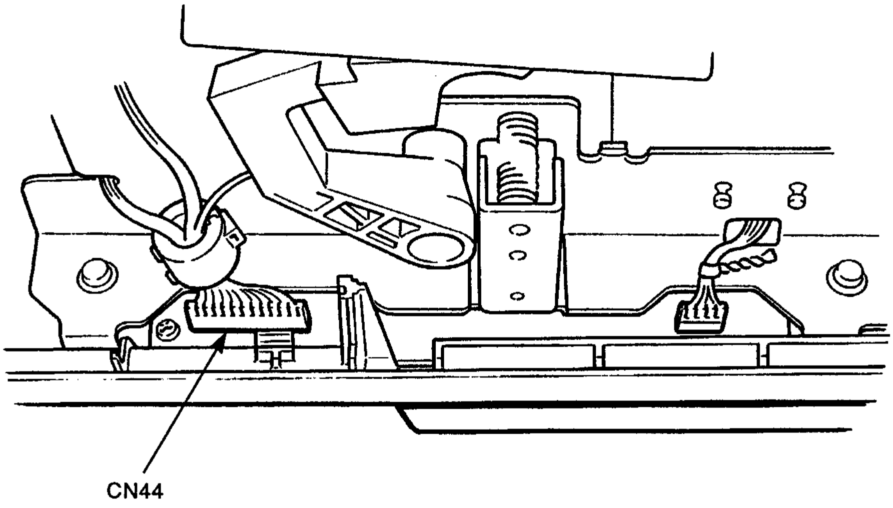


Figure 3-27 Connector CN44

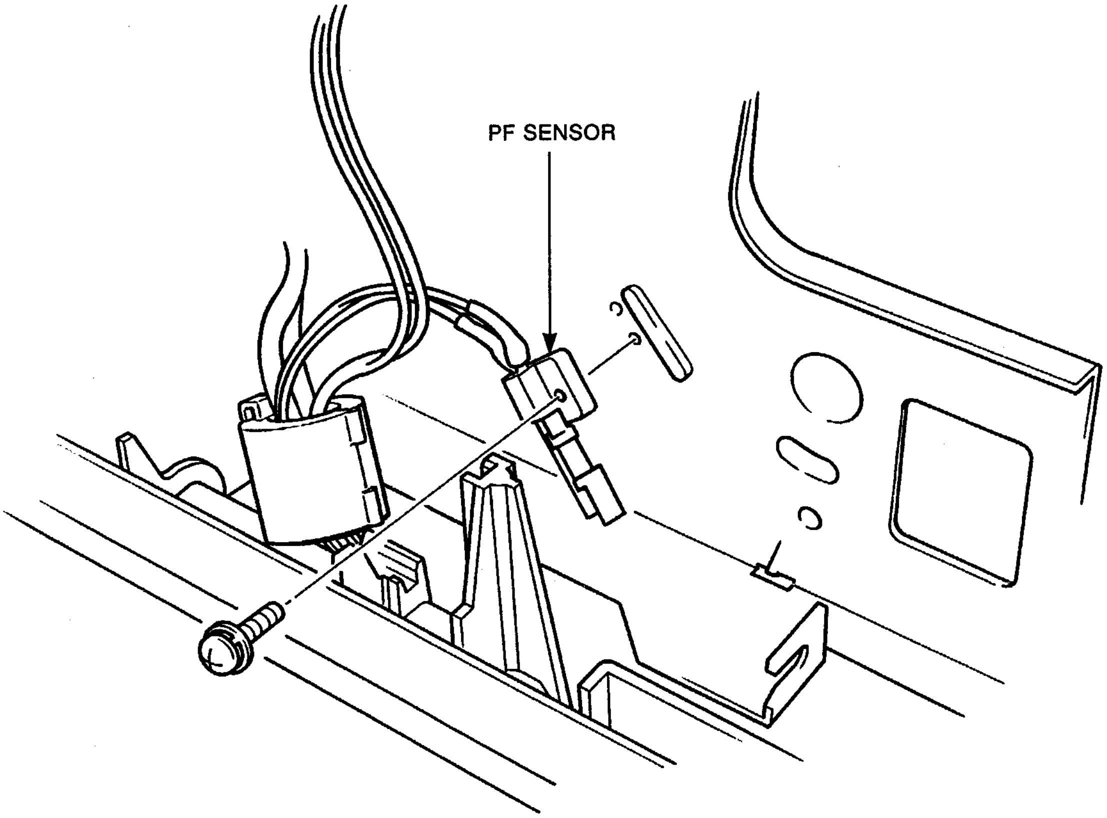


Figure 3-28 PF Sensor

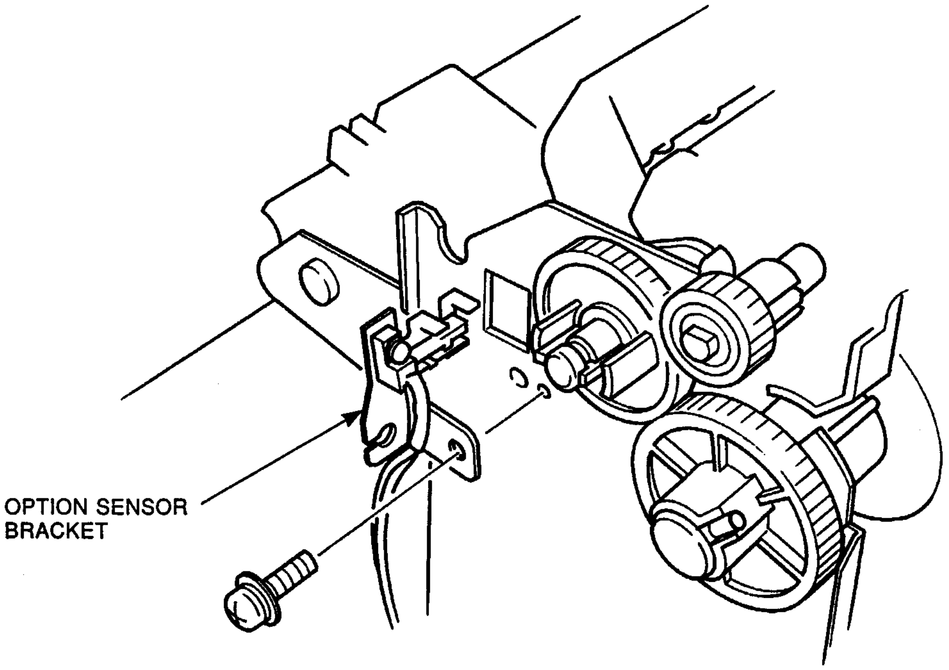

OPTION SENSOR
BRACKET

Figure 3-29 Option Sensor Bracket

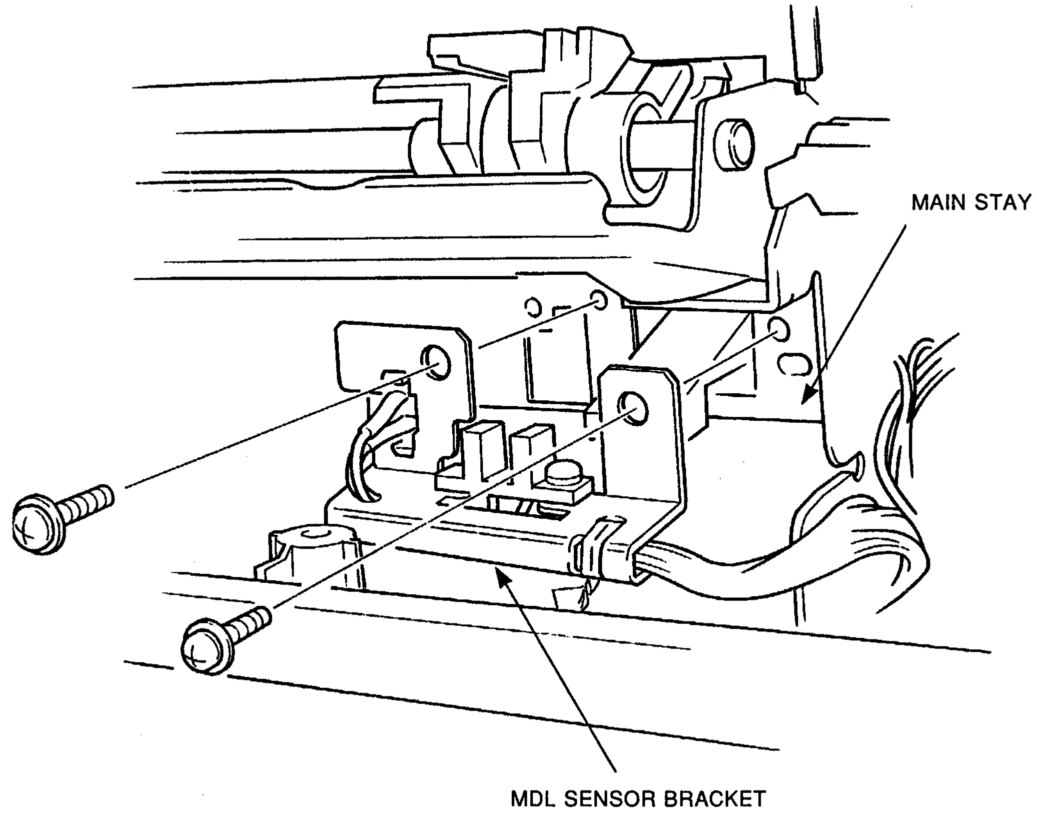

MAIN STAY
MDL SENSOR BRACKET

Figure 3-30 MDL Sensor Bracket

FEED ROLLER UNIT REMOVAL

To remove the feed roller unit, first remove the middle cover assembly. Then proceed as follows.

1. Pull the feed roller unit up to remove it (see Figure 3-31).

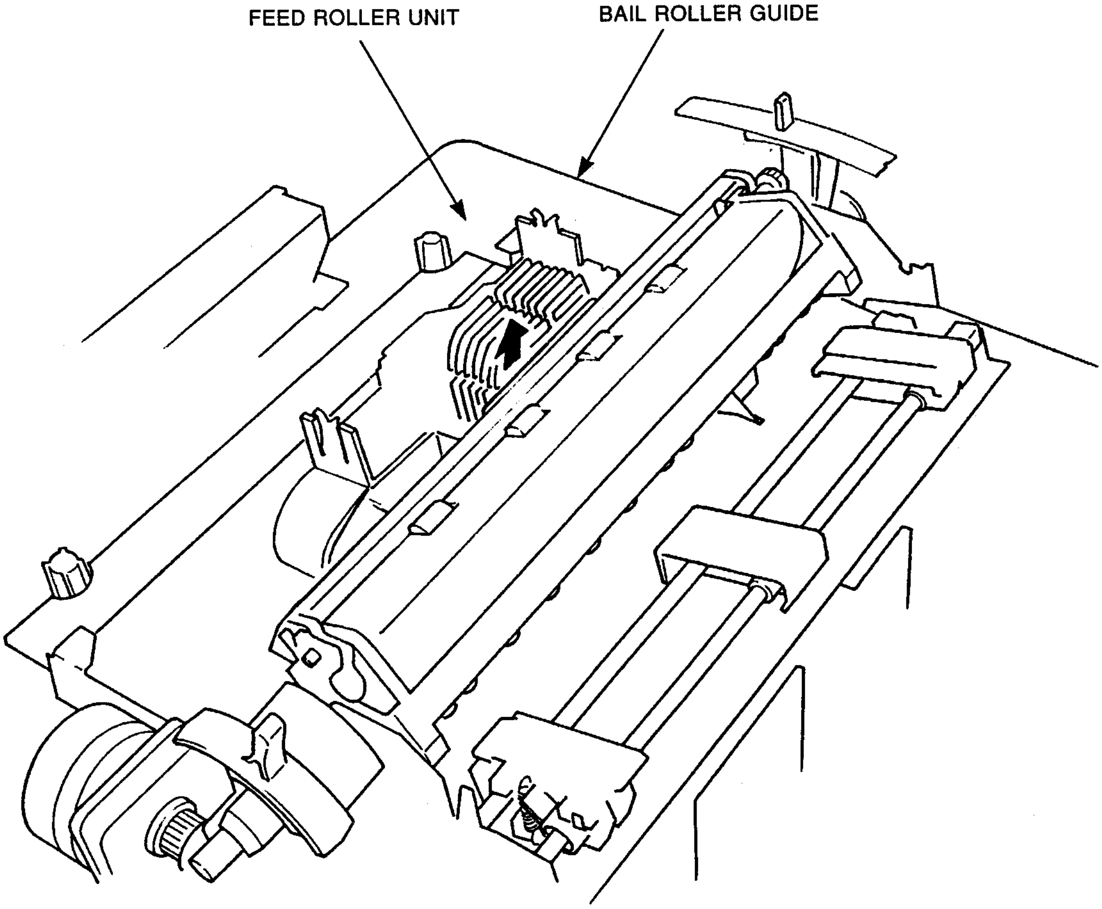

FEED ROLLER UNIT
BAIL ROLLER GUIDE

Figure 3-31 Feed Roller Unit

BAIL ROLLER GUIDE ASSEMBLY REMOVAL

To remove the bail roller guide assembly, first remove the middle cover assembly and feed roller unit. Then proceed as follows.

1. Open the bail roller guide backward.
2. Pull the both ends of the bail roller guide outward and remove it from the feed roller unit (see Figure 3-32).

CAUTION

Do not pull off the bail roller guide more than necessary. Excessive force may cause damage.

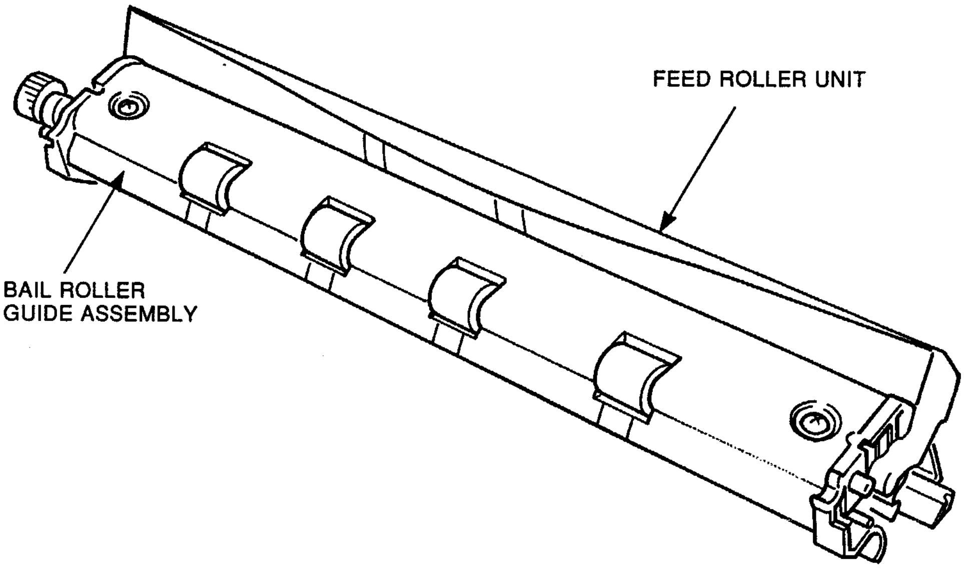


Figure 3-32 Bail Roller Guide Assembly

PLATEN ASSEMBLY REMOVAL

To remove the platen assembly, first remove the middle cover assembly, feed roller unit, print head and card holder. Then proceed as follows.

1. Unlock two locking tabs of the option gear to remove the option gear (see Figure 3-33).
2. Shift the release lever forward (friction mode).
3. Unlock the locking tabs by turning the left and right platen bushing forward and remove the platen assembly (see Figure 3-34 and Figure 3-35).

After replacing the platen assembly, you will need to adjust the platen gap and card holder (see Section 4). Then perform a printer self-test to check for smudging and poor line registration. If necessary, perform the adjustment again.

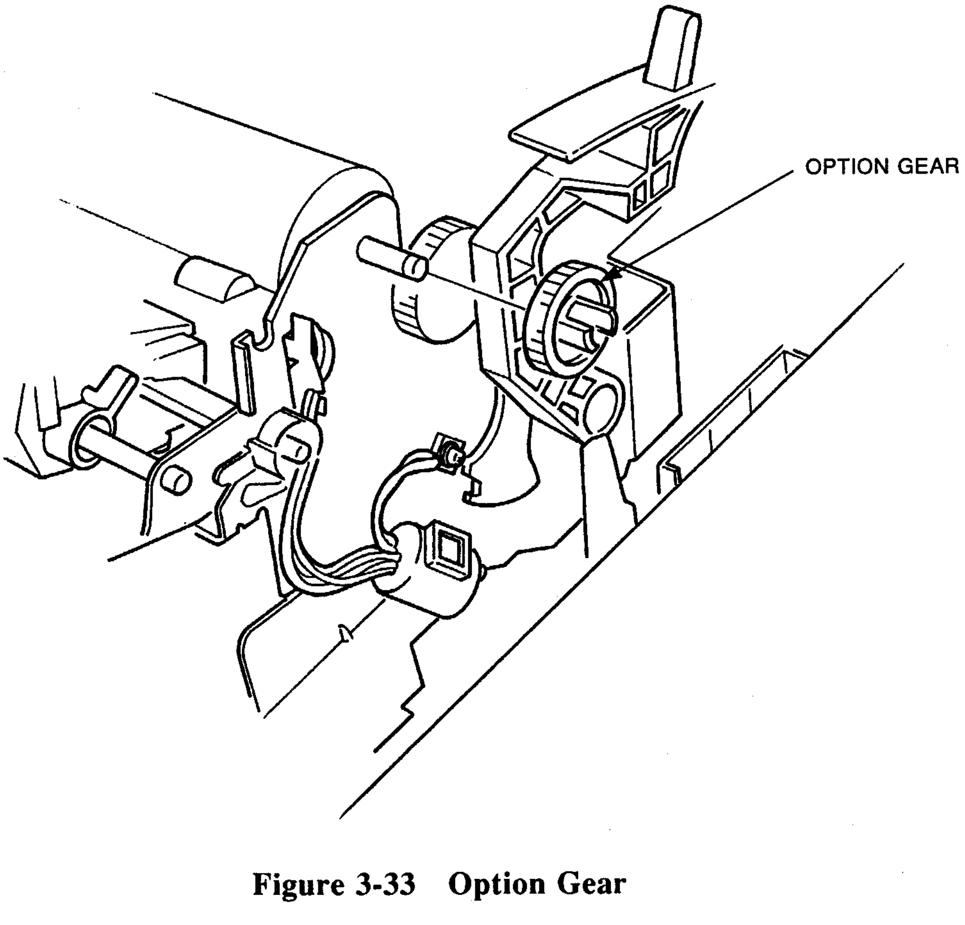


Figure 3-33 Option Gear

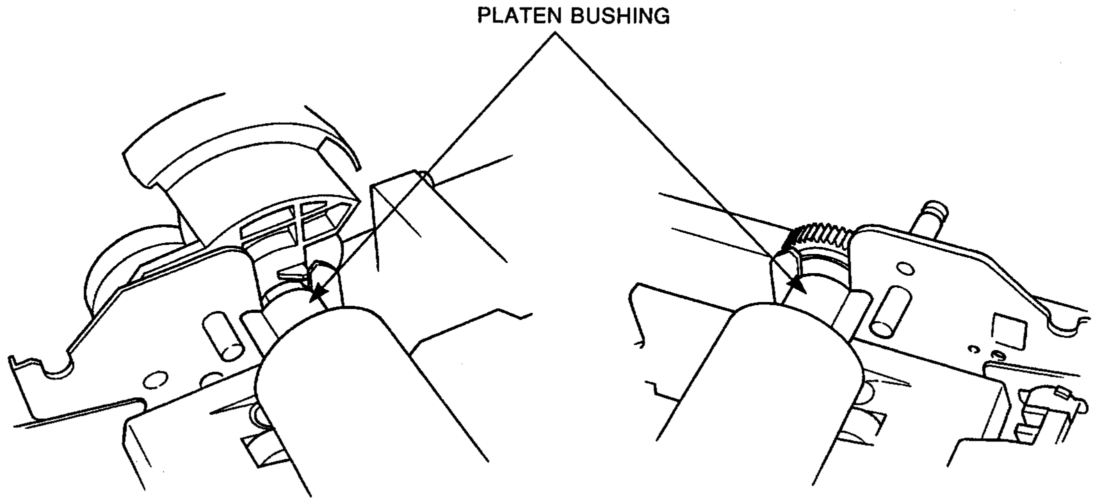

PLATEN BUSHING

Figure 3-34 Platen Bushing

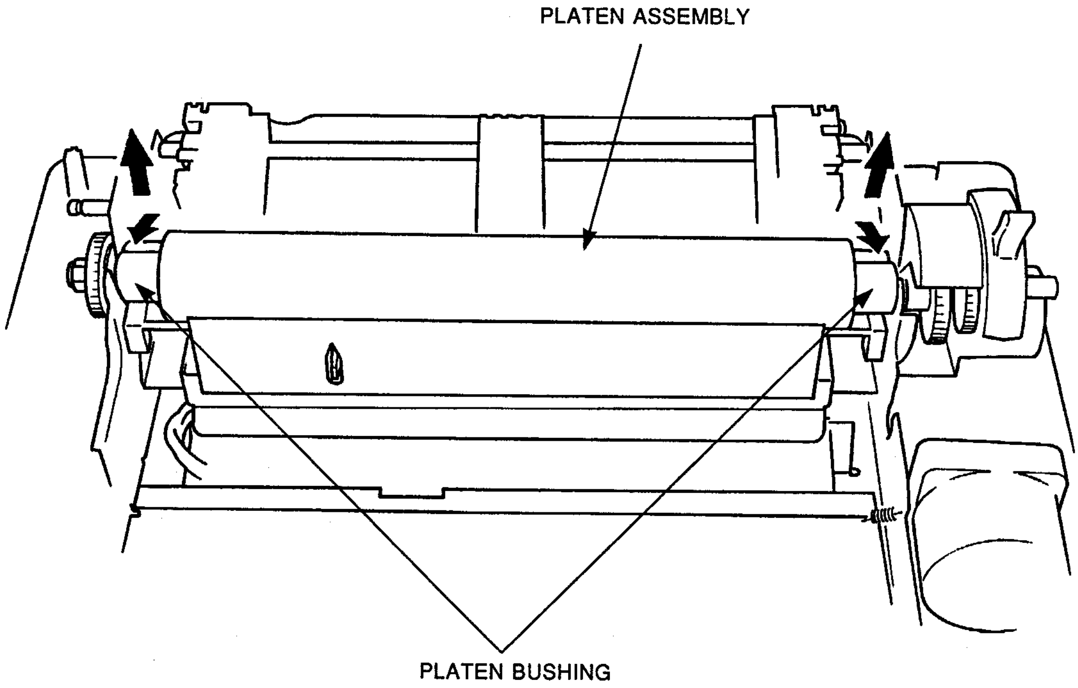

PLATEN ASSEMBLY
PLATEN BUSHING

Figure 3-35 Platen Assembly

BOTTOM GUIDE ASSEMBLY REMOVAL

To remove the bottom guide assembly, first remove the middle cover assembly, the carrier assembly, the feed roller unit and the platen assembly.

1. Remove two screws by inserting the screwdriver into the holes on the both left and right side of the paper guide (see Figure 3-36).
2. Remove the bottom guide assembly.

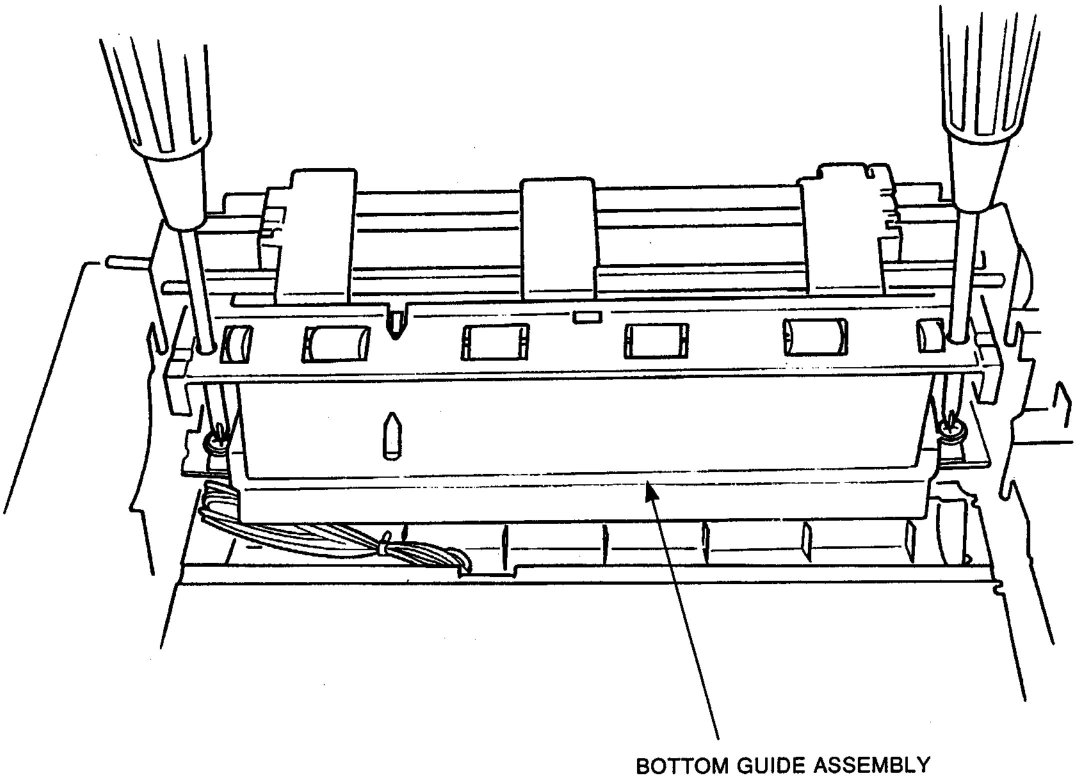


Figure 3-36 Bottom Guide Assembly

PAPER GUIDE REMOVAL

To remove the paper guide, first remove the middle cover assembly, the feed roller unit, card holder, the platen assembly, the carrier assembly and the bottom guide assembly.

1. Lift up the front side off the paper guide and remove it from the printer (see Figure 3-37).

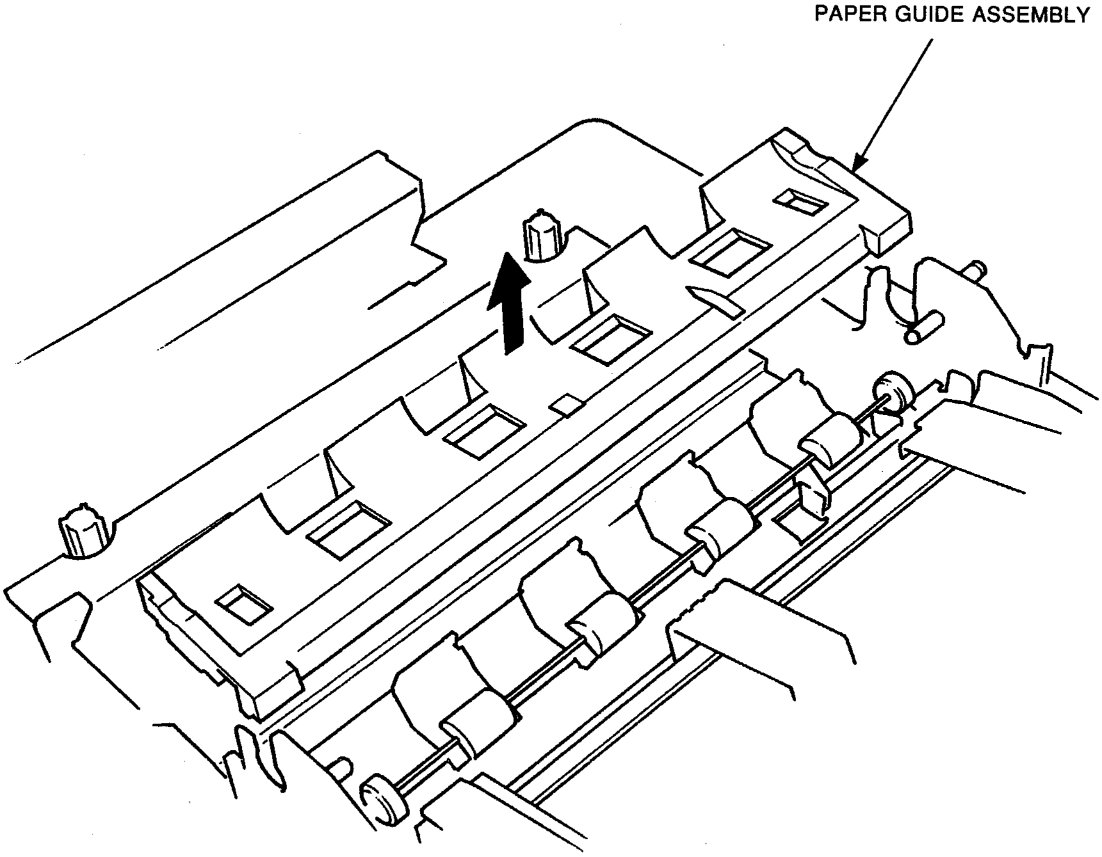


Figure 3-37 Paper Guide Assembly

MECHANISM UNIT REMOVAL

To remove the mechanism unit, first remove the middle cover assembly. Then proceed as follows.

1. Move the carrier to the right side of the printer.
2. Lift off the carrier cable cover by unlocking the tab (see Figure 3-38).
3. Pull up both ends of the connector locks CN14 through CN16 (see Figure 3-39).
4. Remove the cables from the unlocked connectors.
5. Remove the cable cover by removing the three screws securing it to the shield cover (see Figure 3-40).
6. Disconnect CN18 and CN19 from the mother board (see Figure 3-41).
7. Disconnect CN42 and CN44 from the connection board (see Figure 3-42).
8. Remove the four screws securing the mechanism assembly (see Figure 3-43).
9. Hold the mechanism assembly by the front and rear frames, lift the assembly out of the printer (see Figure 3-44).

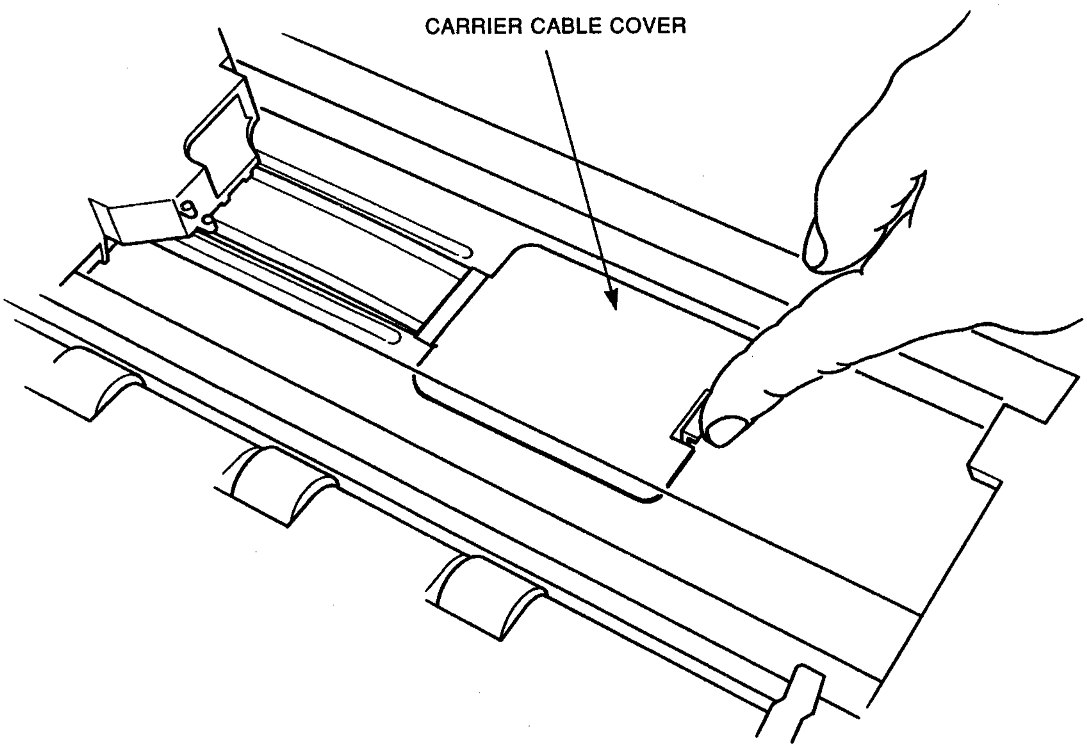


Figure 3-38 Carrier Cable Cover

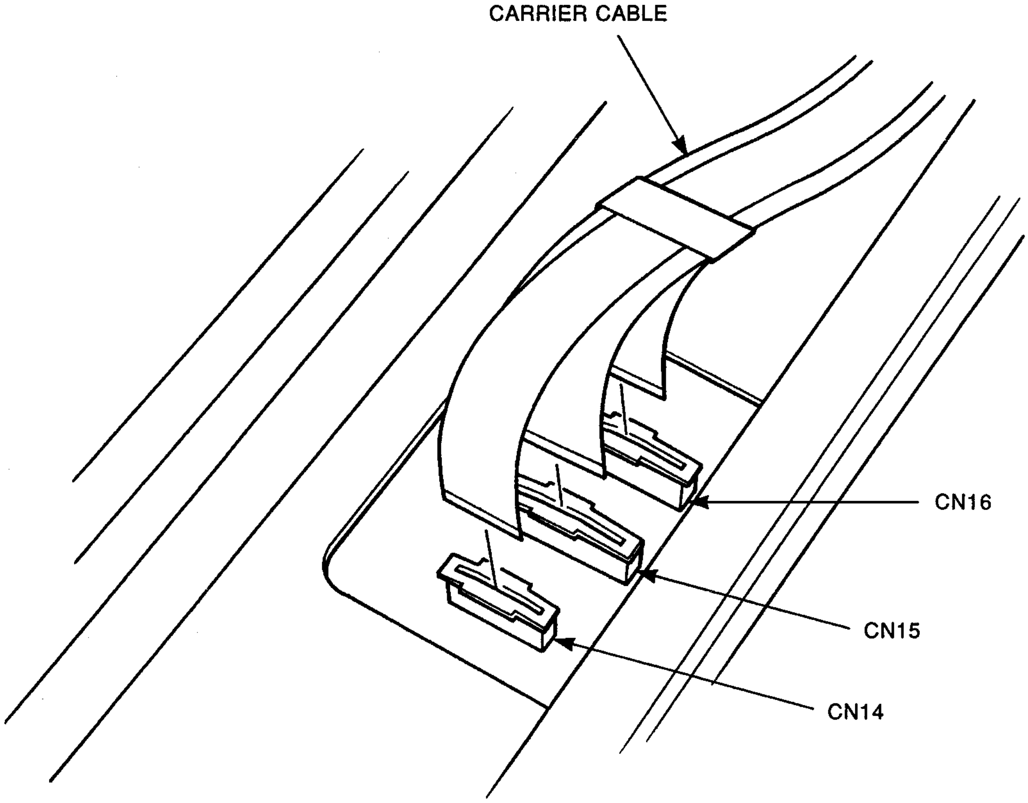

CARRIER CABLE
CN16
CN15
CN14

Figure 3-39 Carrier Cable Connectors

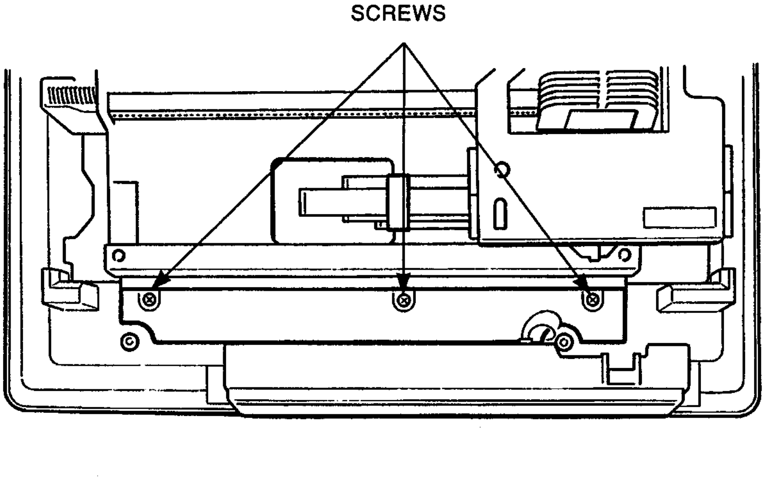


Figure 3-40 Cable Cover

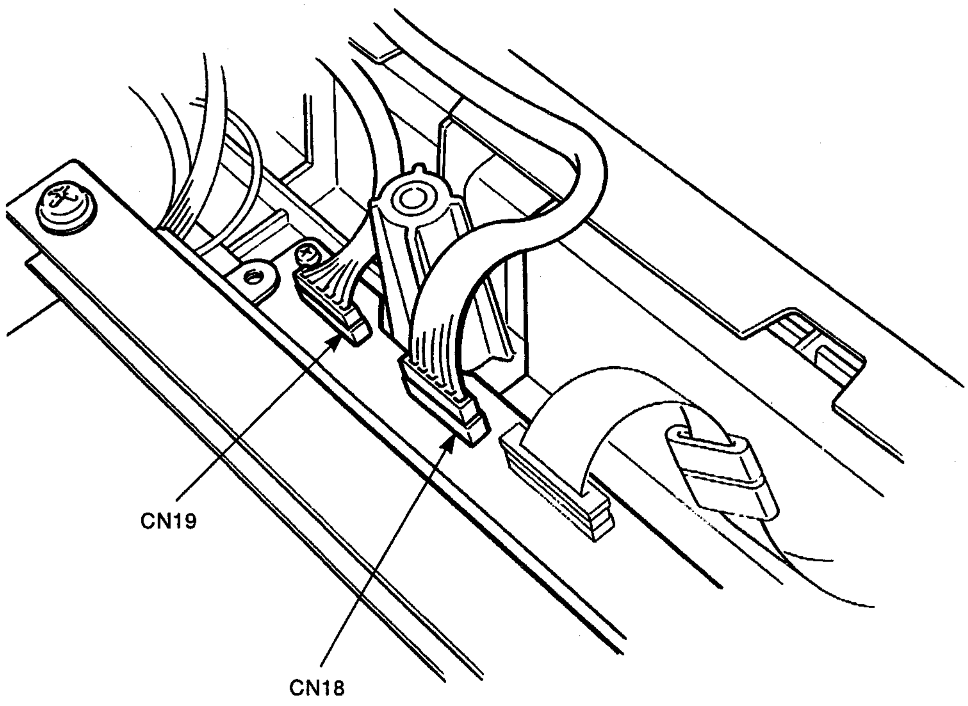


Figure 3-41 Motor Connectors

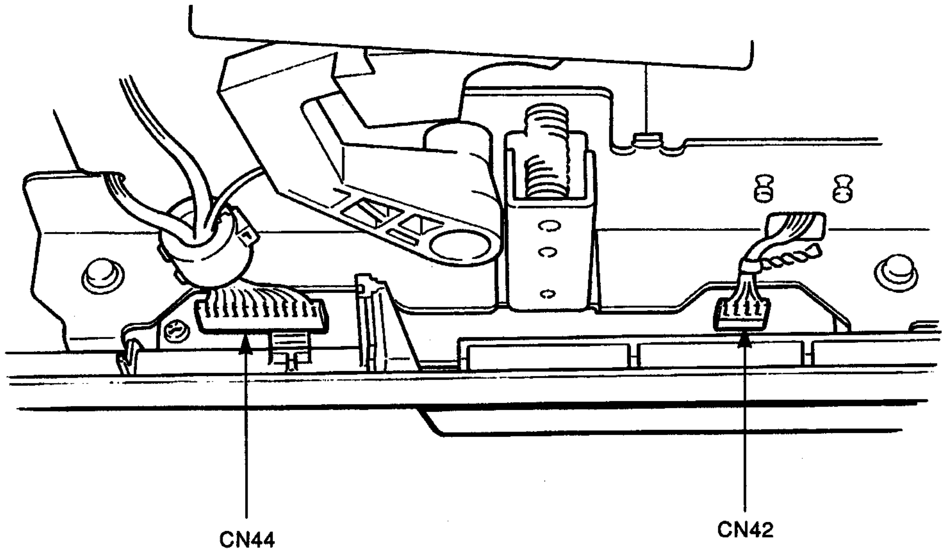


Figure 3-42 Connectors CN42 and CN44

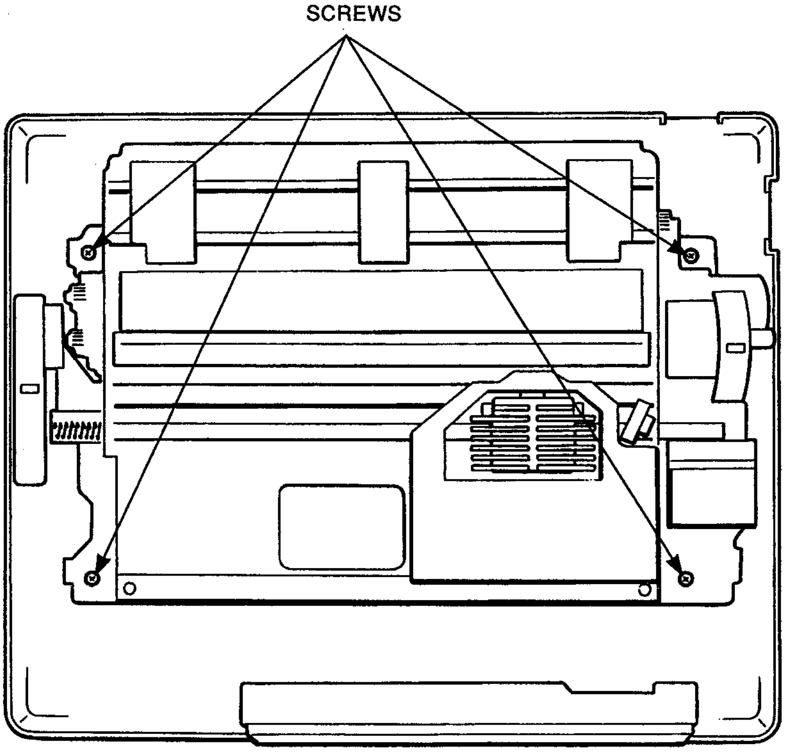


Figure 3-43 Mechanism Assembly Mounting Screws

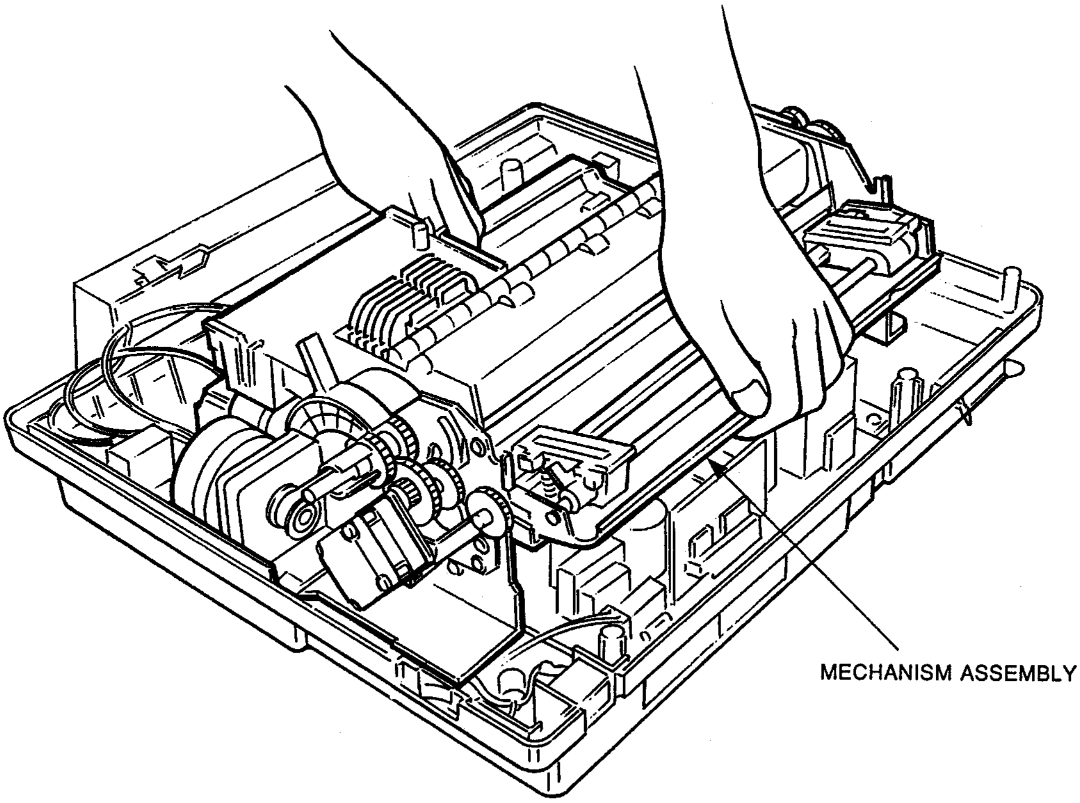

MECHANISM ASSEMBLY

Figure 3-44 Mechanism Assembly Removal

SP MOTOR ASSEMBLY REMOVAL

To remove the SP motor assembly, first remove the middle cover assembly, print head and card holder. Then proceed as follows.

1. Press the tension arm to the left side frame and remove the timing belt from the SP motor pulley (see Figure 3-45).
2. Remove the cable cover by removing the three screws securing it to the shield cover (see Figure 3-46).
3. Disconnect CN18 from the mother board (see Figure 3-47).
4. Remove the vinyl twist-tie securing the motor cable to the right side frame (see Figure 3-48).
5. Remove the two screws securing the SP motor unit to the right side frame (see Figure 3-49).
6. Remove the SP motor unit out of the printer.
7. Remove the four screws securing the SP motor assembly to the SP motor bracket (see Figure 3-50).

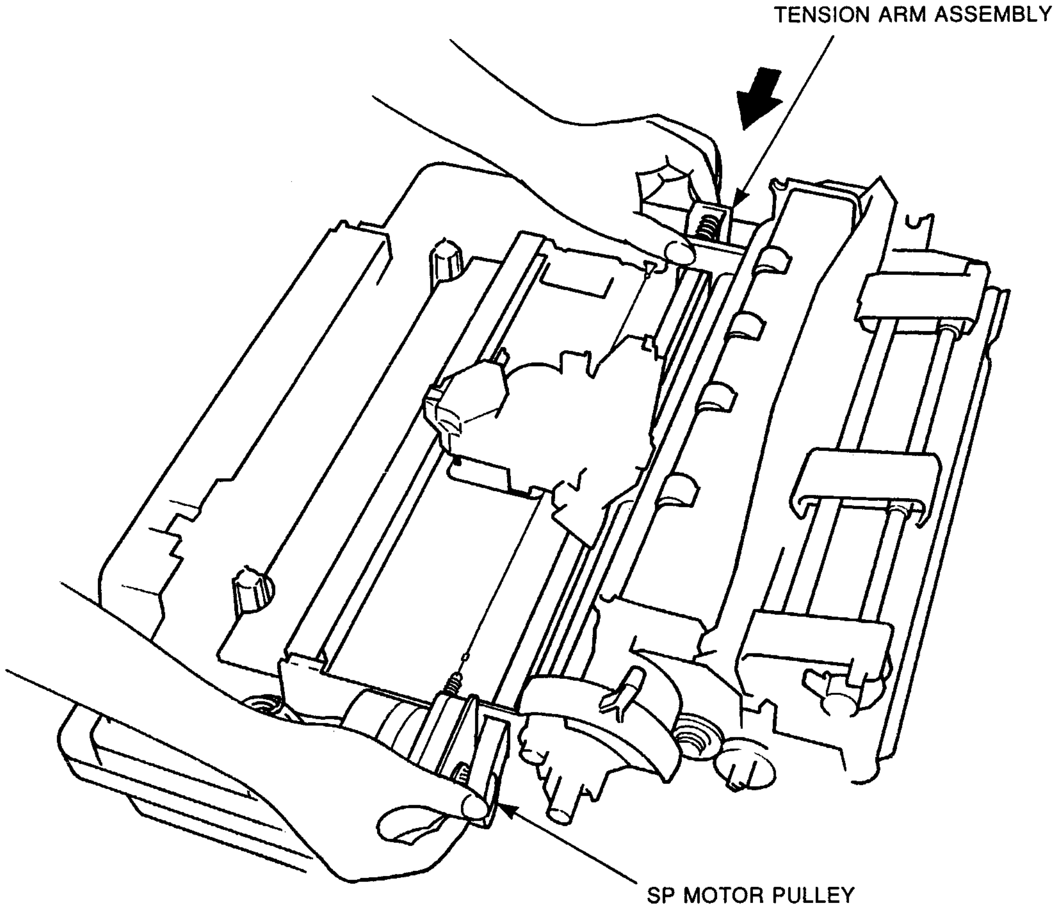


Figure 3-45 Timing Belt

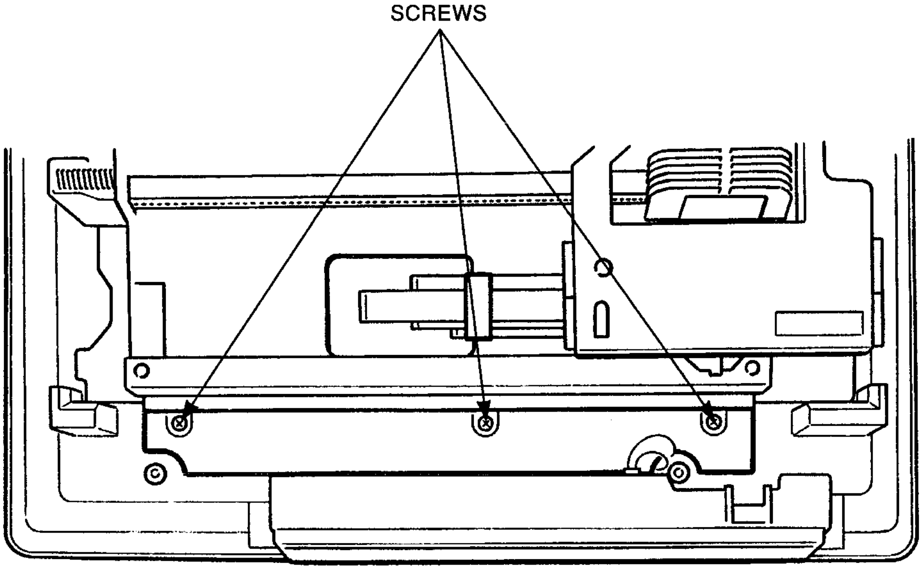


Figure 3-46 Cable Cover

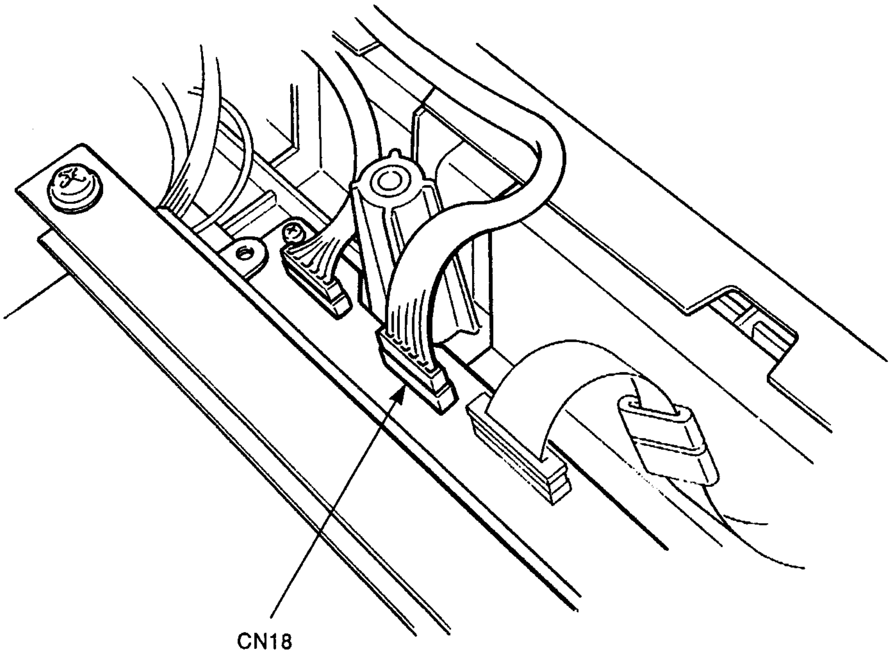


Figure 3-47 Connector CN18

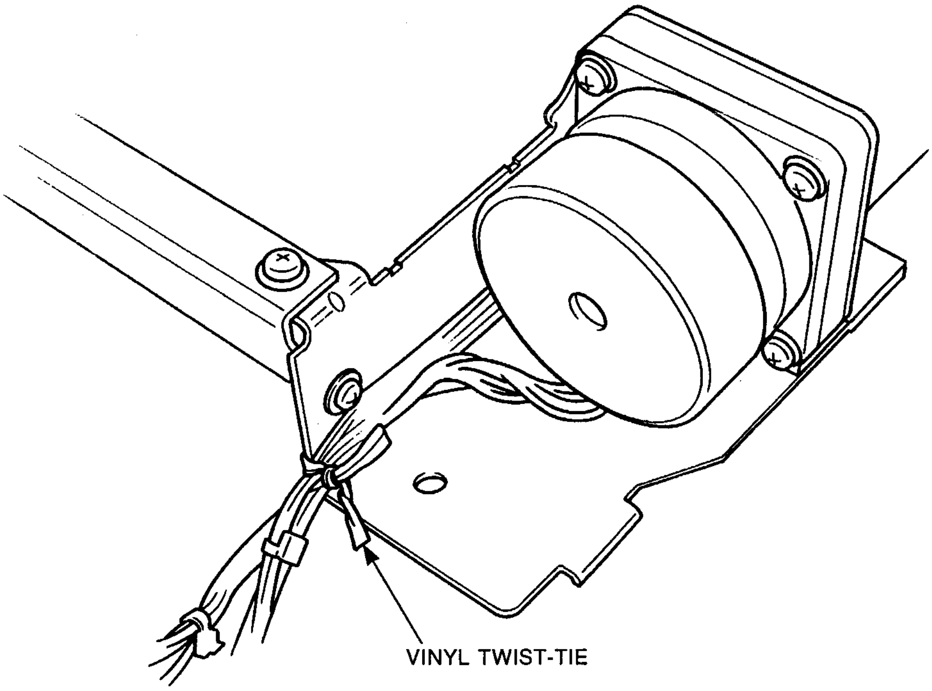

VINYL TWIST-TIE

Figure 3-48 Vinyl Twist-Tie

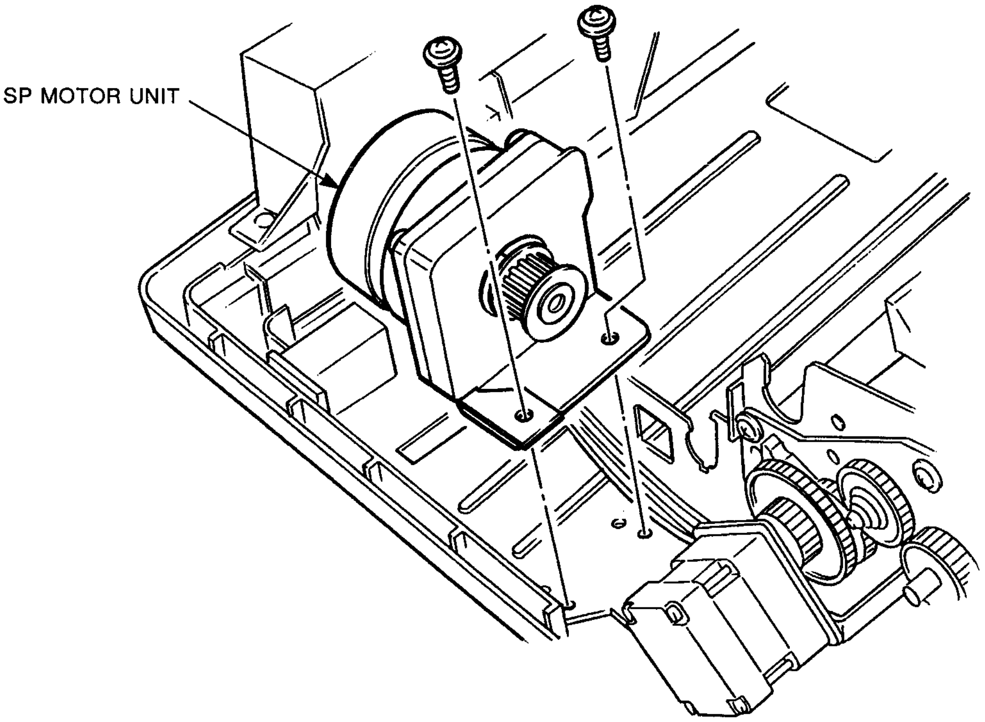

SP MOTOR UNIT

Figure 3-49 SP Motor Unit

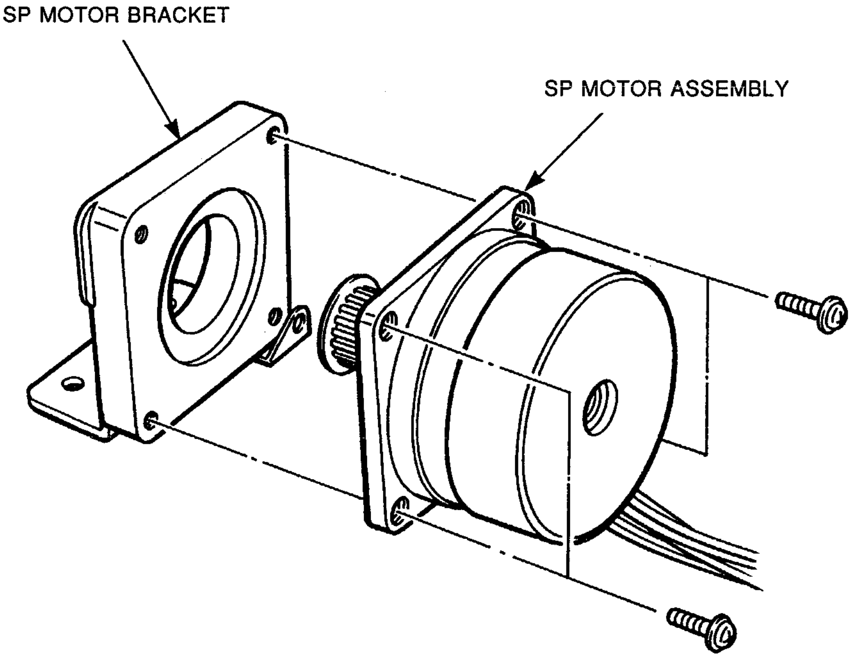

SP MOTOR BRACKET
SP MOTOR ASSEMBLY

Figure 3-50 SP Motor Assembly

LF MOTOR ASSEMBLY REMOVAL

To remove the LF motor assembly, first remove the middle cover assembly, feed roller unit, the platen assembly, SP motor unit and tractor unit (see Figure 3-49). Then proceed as follows.

1. Disconnect CN19 from the mother board (see Figure 3-51).
2. Remove the LF motor unit by removing the three mounting screws (see Figure 3-52).
3. Remove LF motor cables from cable clamp (see Figure 3-53).
4. Remove the three screws securing the LF motor assembly to the LF motor bracket (see Figure 3-54).

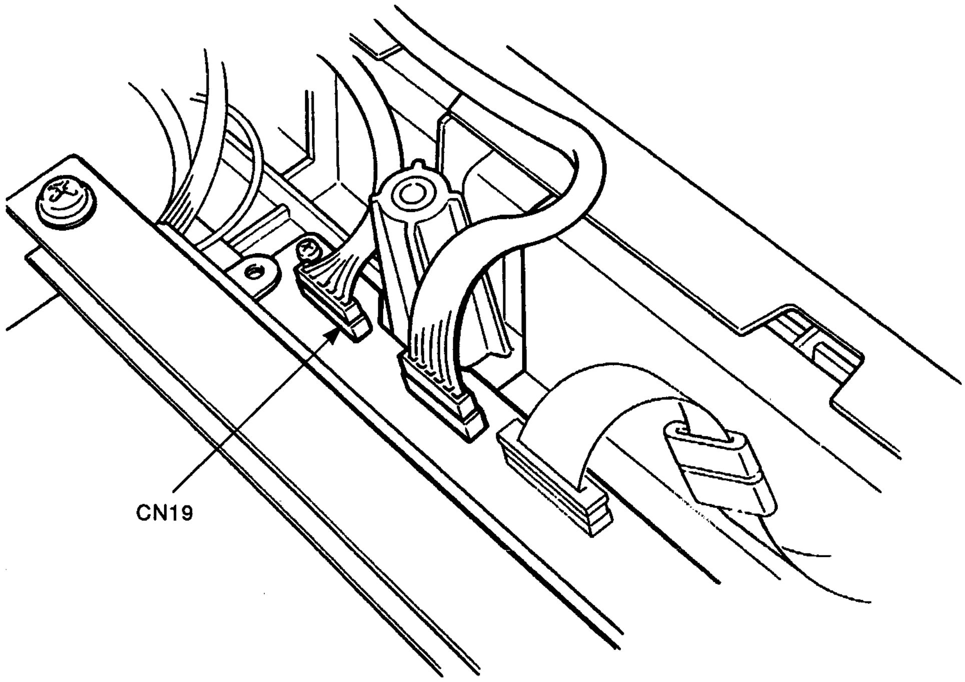


Figure 3-51 Connector CN19

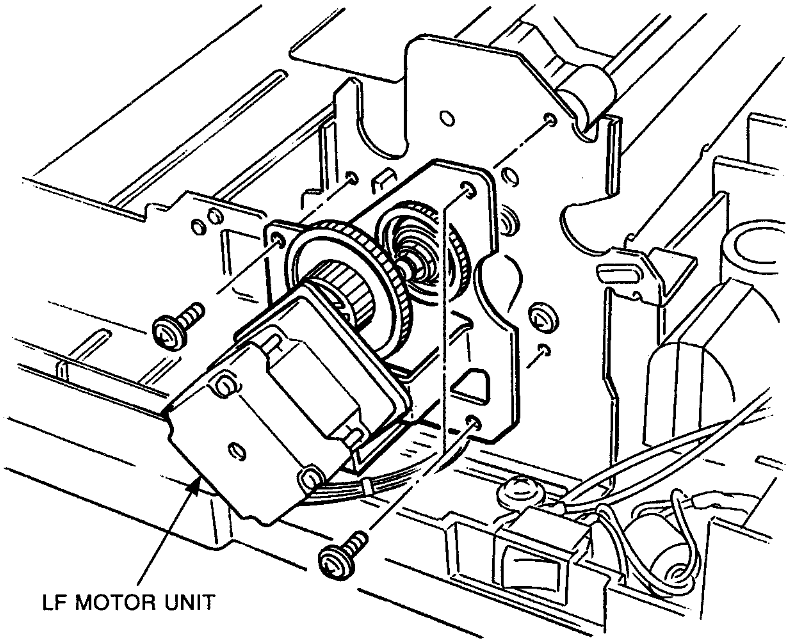

LF MOTOR UNIT

Figure 3-52 LF Motor Unit

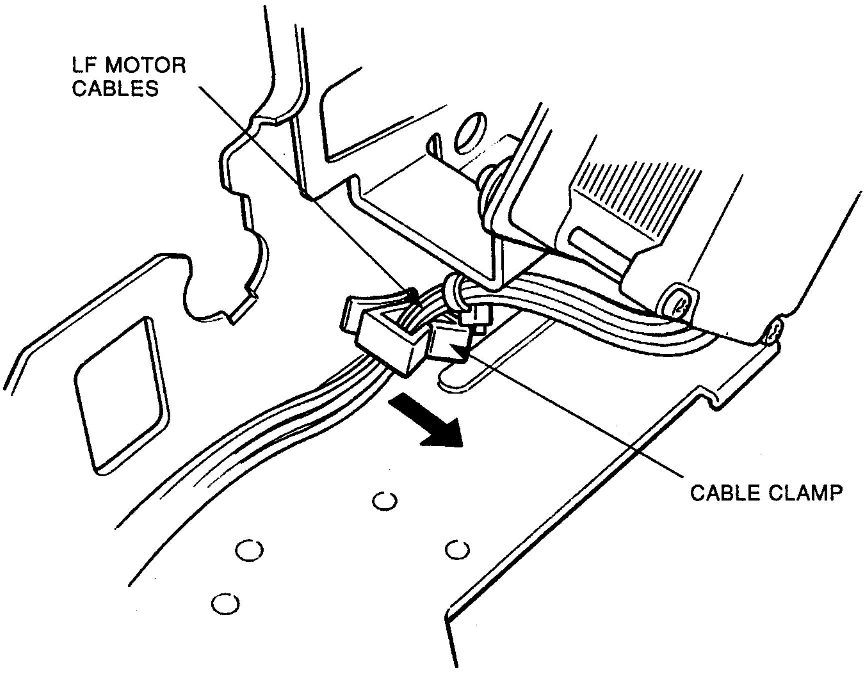

LF MOTOR CABLES
CABLE CLAMP

Figure 3-53 Cable Clamp

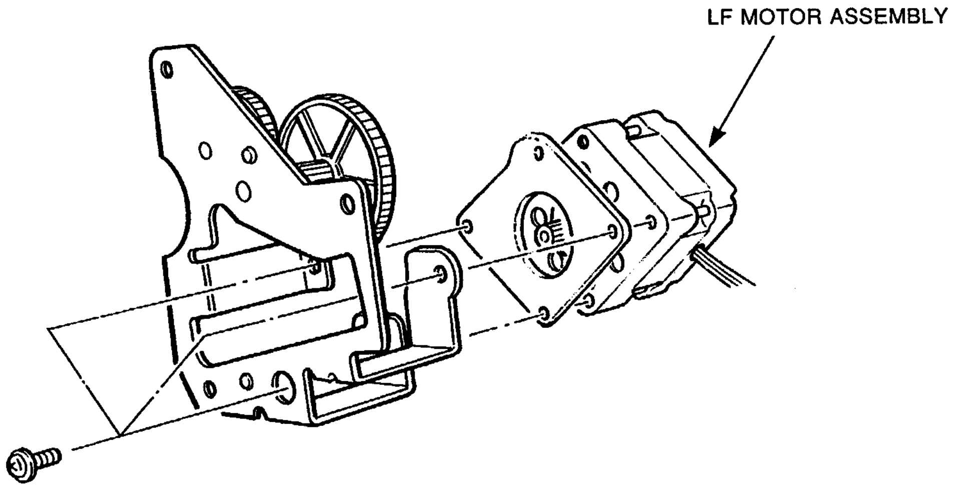

LF MOTOR ASSEMBLY

Figure 3-54 LF Motor Assembly

PAPER RELEASE ARM REMOVAL

To remove the paper release arm, first remove the middle cover assembly, the platen assembly and tractor unit.

1. Remove the LF motor unit by removing the three screws securing it to the right side frame (see Figure 3-55).
2. Turn the paper release arm until the tab on the paper release arm aligns with the slot on the right side frame (see Figure 3-56).
3. Pull off the paper release arm.

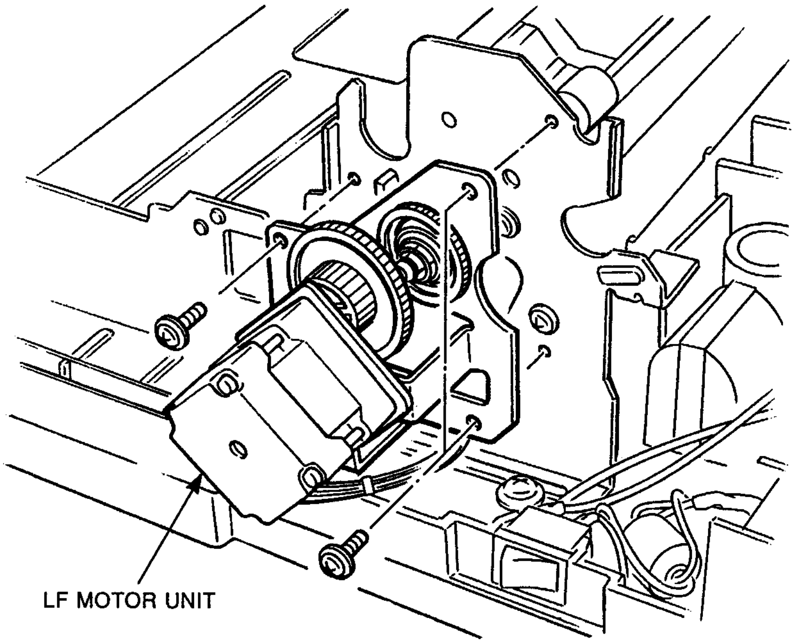


Figure 3-55 LF Motor Unit

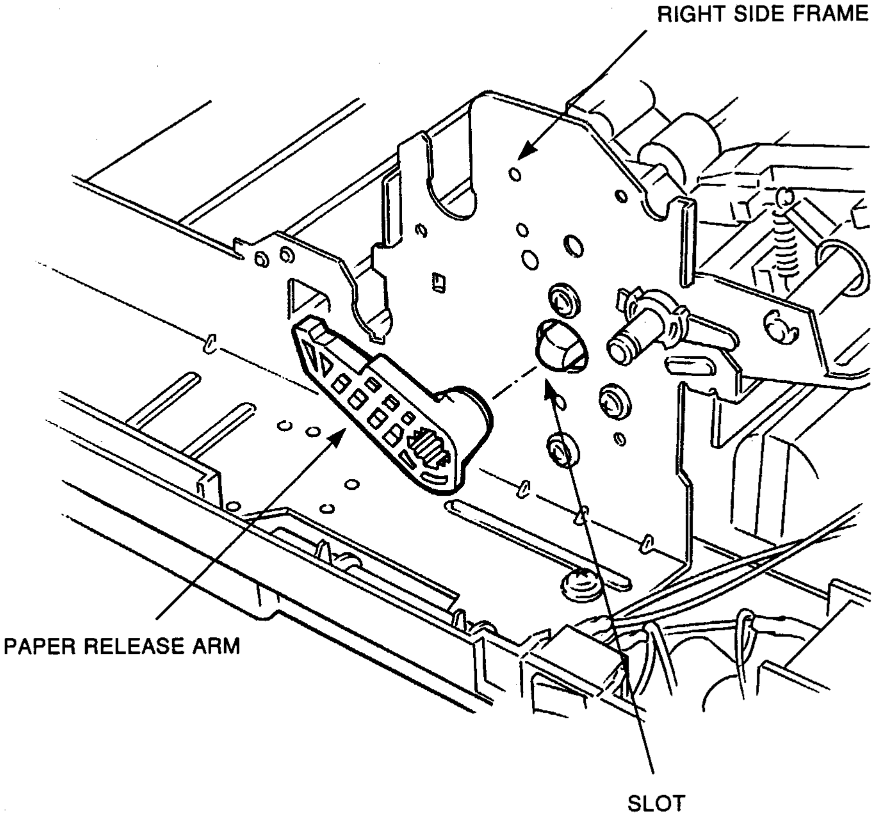

RIGHT SIDE FRAME
PAPER RELEASE ARM
SLOT

Figure 3-56 Paper Release Arm

TRACTOR UNIT REMOVAL

To remove the tractor unit, first remove the middle cover assembly. Then proceed as follows.

1. Remove the two screws securing the tractor frame to the left and right side frames (see Figure 3-57).
2. Turn the tractor unit forward and lift it out of the mechanism unit (see Figure 3-57).

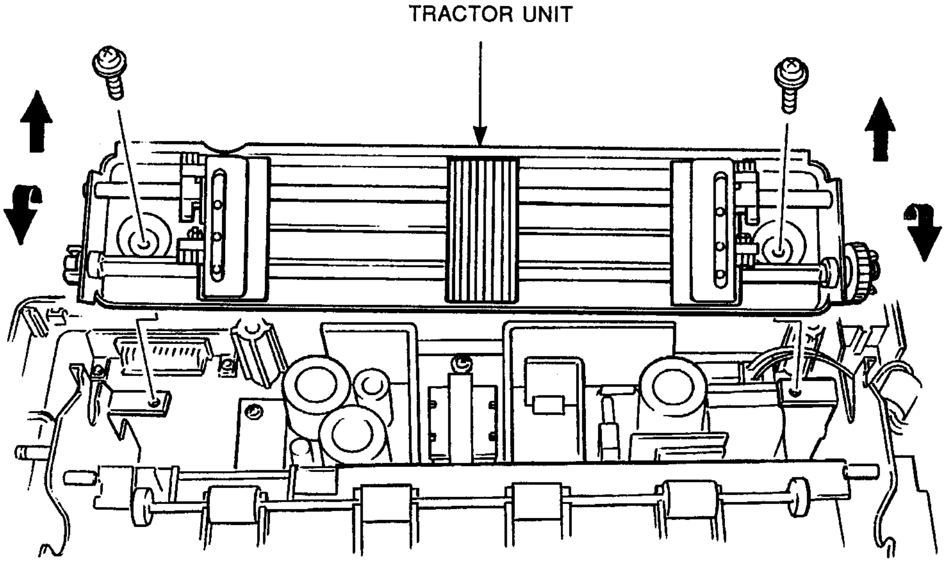


Figure 3-57 Tractor Unit Mounting Screws

TRACTOR ASSEMBLY REMOVAL

To remove the tractor assembly, first remove the middle cover assembly and tractor unit. Then proceed as follows.

1. Remove the tractor gear from the tractor drive shaft by unlocking the lock tab (see Figure 3-58).
2. Releasing the locking tab, turn the tractor bushing (RH) until the tabs on the bushing align with the slot on the tractor frame and remove it (see Figure 3-58).
3. Releasing the locking tab, turn the tractor bushing (LH) until the tabs on the bushing align with the slot on the tractor frame and remove it (see Figure 3-59).
4. Slide and remove the tractor drive shaft (see Figure 3-60).
5. Remove the special retainer and slide the tractor support shaft to the left side (see Figure 3-61).
6. Pull the right tractor assembly, center guide, and left tractor assembly from the tractor unit.

CAUTION

When replacing the tractor assembly, make sure the alignment marks on the tractors are in the same relative position (see Figure 3-62).

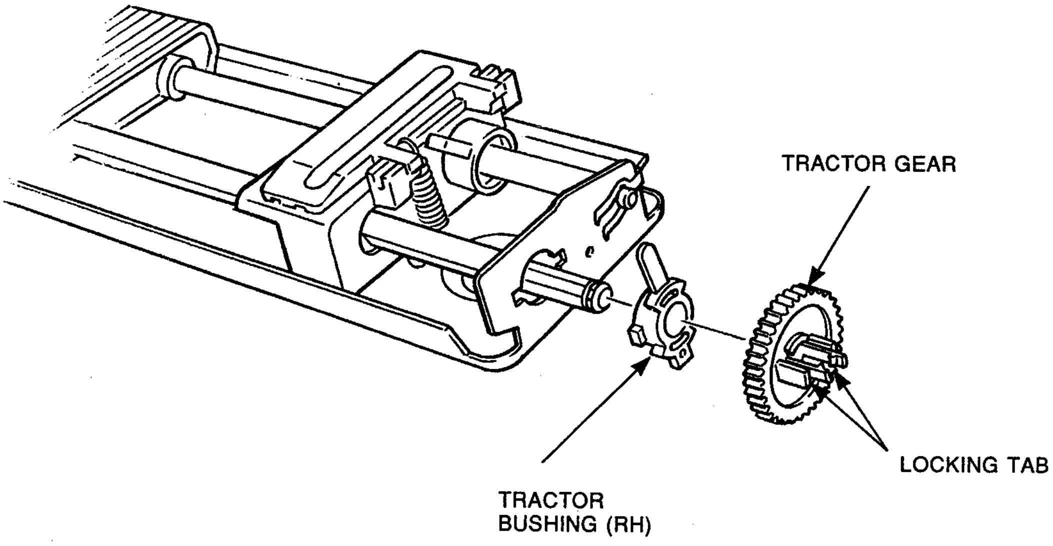

TRACTOR GEAR
LOCKING TAB
TRACTOR BUSHING (RH)

Figure 3-58 Tractor Gear and Tractor Bushing (RH)

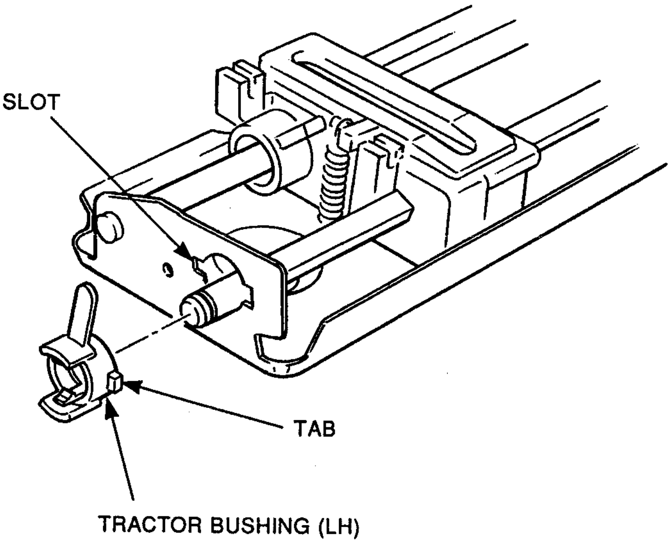

SLOT
TAB
TRACTOR BUSHING (LH)

Figure 3-59 Tractor Bushing (LH)

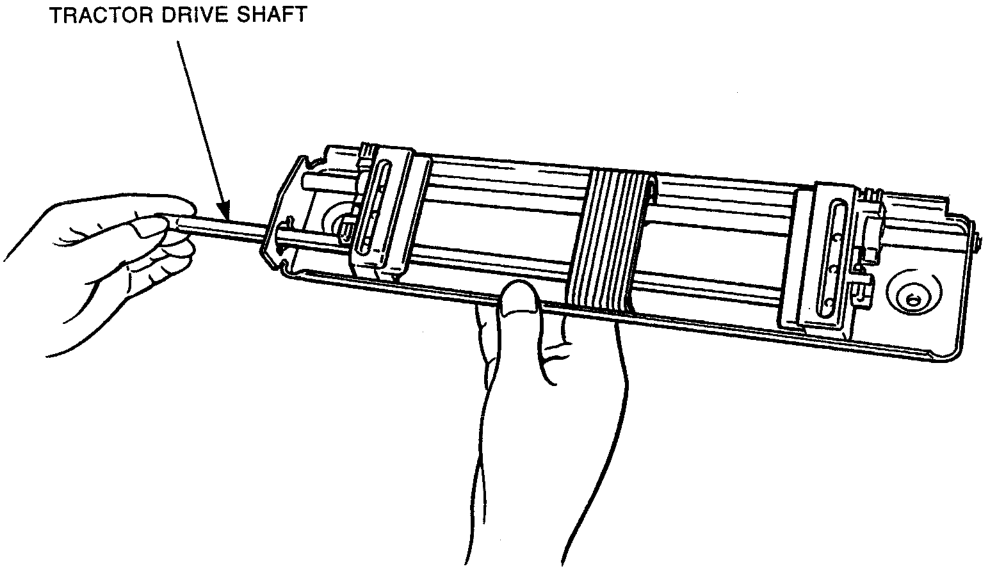

TRACTOR DRIVE SHAFT

Figure 3-60 Tractor Drive Shaft

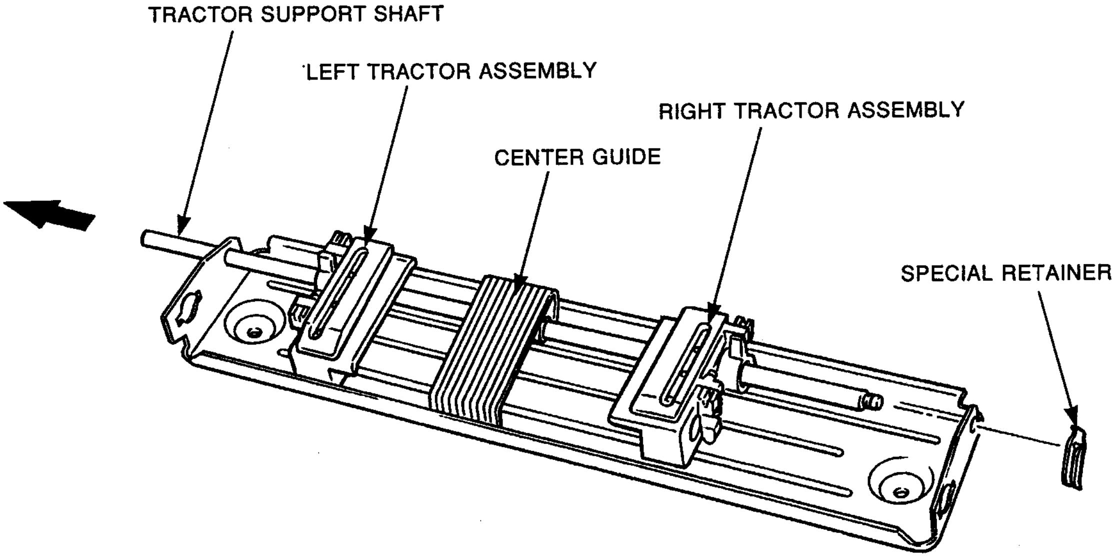

TRACTOR SUPPORT SHAFT
LEFT TRACTOR ASSEMBLY
RIGHT TRACTOR ASSEMBLY
CENTER GUIDE
SPECIAL RETAINER

Figure 3-61 Tractor Support Shaft

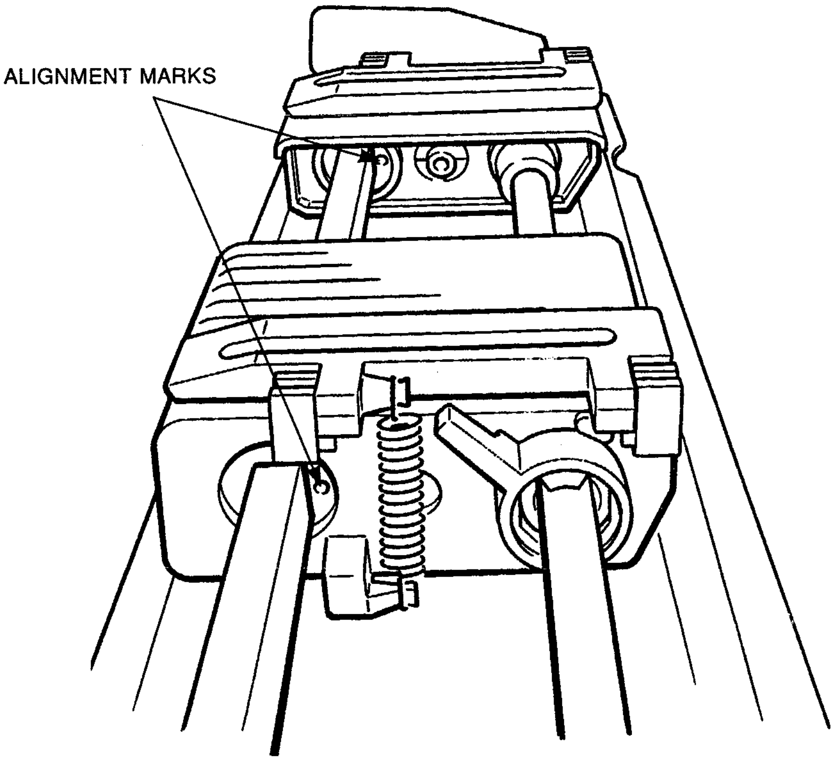

ALIGNMENT MARKS

Figure 3-62 Alignment Marks

MOTHER BOARD PCB ASSEMBLY REMOVAL

To remove the mother board PCB assembly, first remove the middle cover assembly and mechanism unit. Then proceed as follows.

1. Remove the shield cover by removing the four mounting screws (see Figure 3-63).

NOTE

> Make sure the screw at right-front corner of the shield cover secures the cover, together with the FG cable.

2. Pull up both ends of the connector lock CN17 and remove the OPP cable from the unlocked connector (see Figure 3-64).
3. Disconnect DC cable from CN12 of the mother board PCB (see Figure 3-64).
4. Remove the six mounting screws (see Figure 3-64).
5. Lift off the mother board PCB assembly by disconnecting CN11 from CN41 on the connection board PCB assembly (see Figure 3-65).

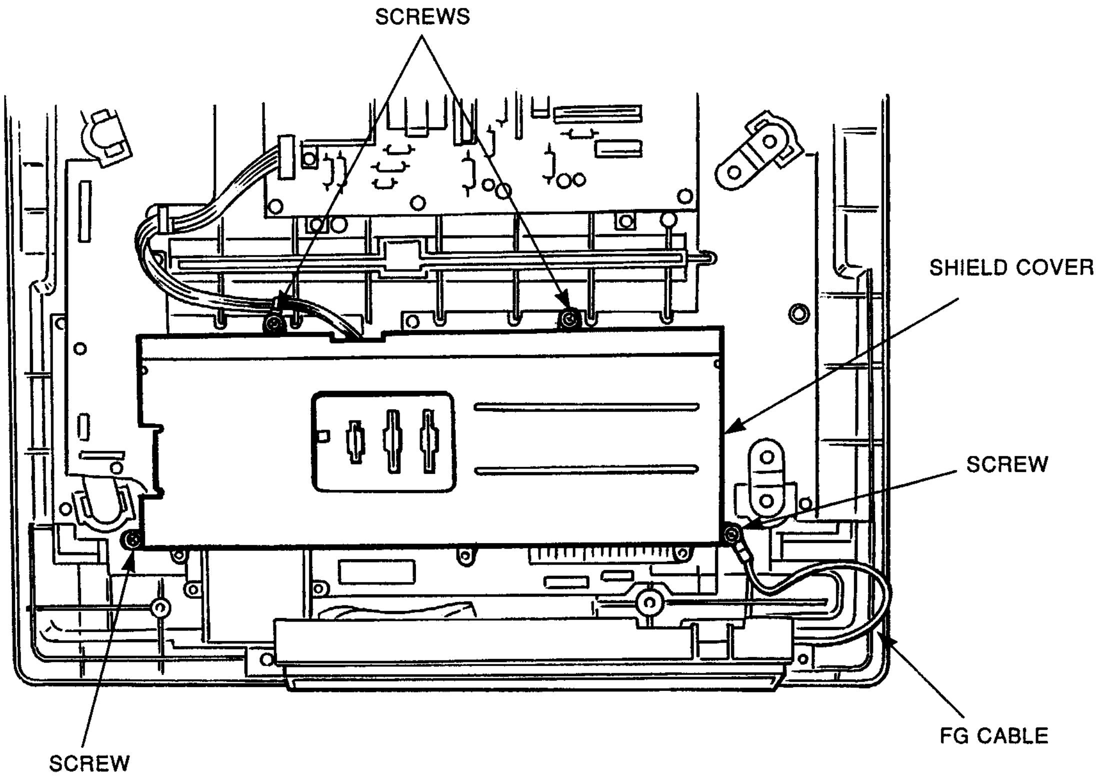


Figure 3-63 Shield Cover

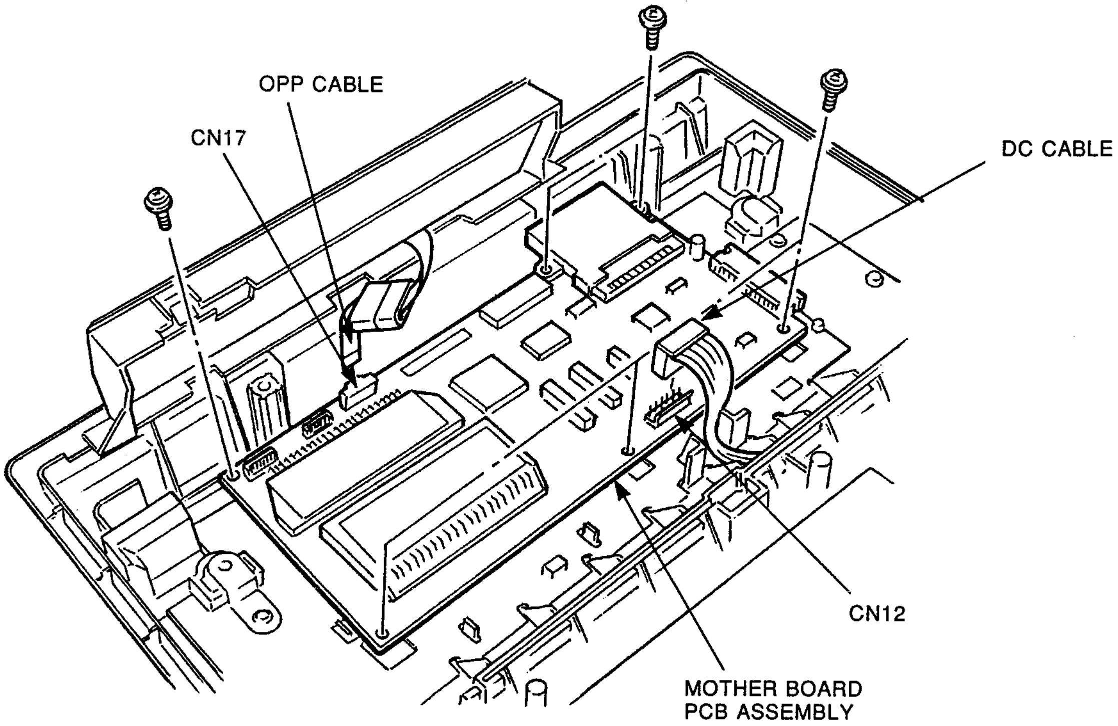

OPP CABLE
CN17
DC CABLE
CN12
MOTHER BOARD
PCB ASSEMBLY

Figure 3-64 DC Cable Removal and Mother Board PCB Assembly Removal

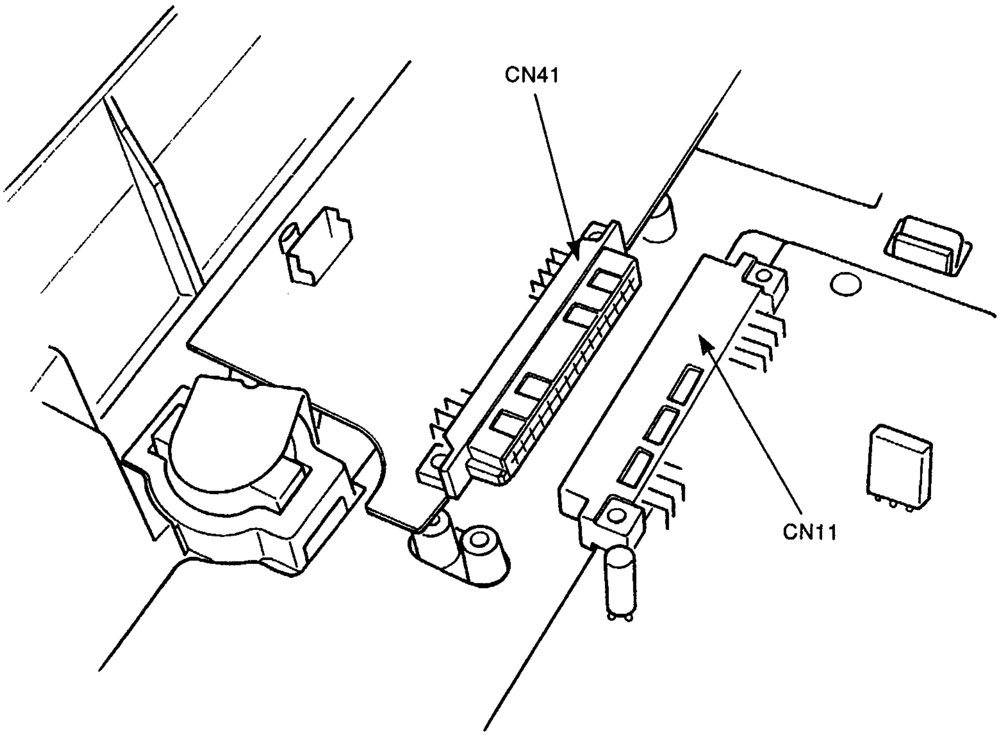


Figure 3-65 Connectors CN11 and CN41

POWER SUPPLY PCB ASSEMBLY REMOVAL

To remove the power supply PCB assembly, first remove the middle cover assembly and mechanism assembly. Then proceed as follows.

1. Disconnect CN1 and CN2 from the power supply PCB assembly (see Figure 3-66).
2. Lift off the power supply PCB assembly by removing the six mounting screws (see Figure 3-66).

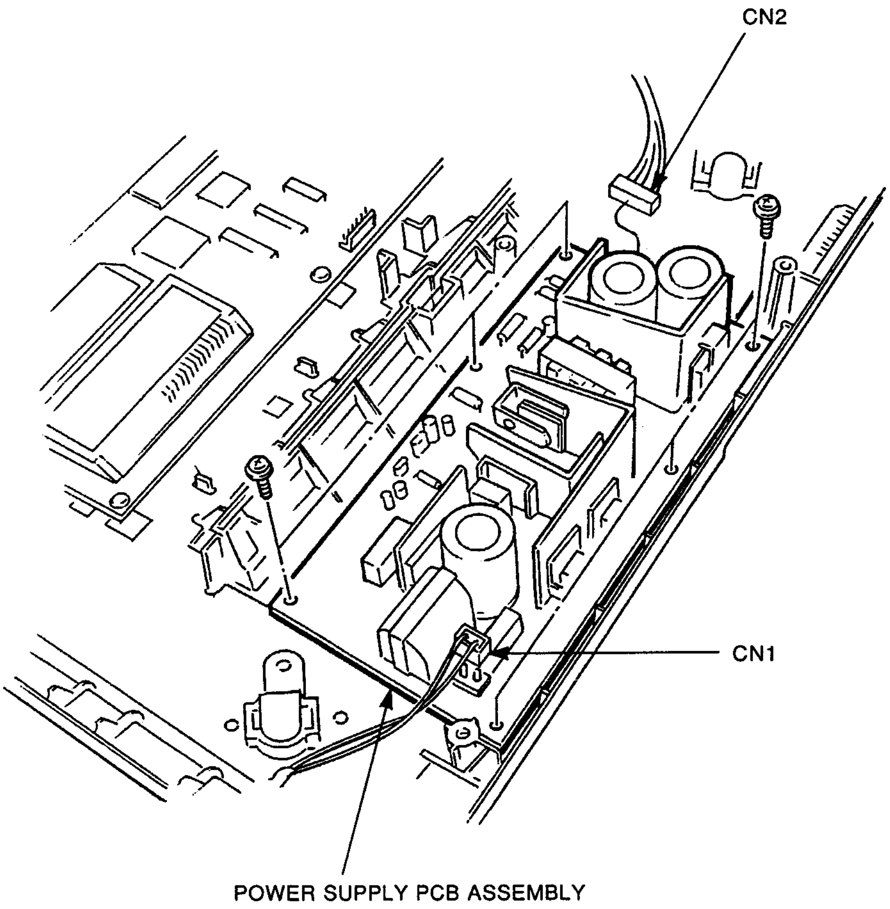


Figure 3-66 Power Supply PCB Assembly

CONTROL PANEL ASSEMBLY REMOVAL

To remove the control panel assembly, first remove the middle cover assembly. Then proceed as follows.

1. Remove the cable cover by removing the three screws securing it to the shield cover (see Figure 3-67).
2. Pull up both ends of the connector lock CN17 and remove the cable from the unlocked connector (see Figure 3-68).
3. Remove the FG cable by removing the screw securing it to the shield cover (see Figure 3-68).
4. Remove the control panel by removing the two screws securing it to the printer base (see Figure 3-69).

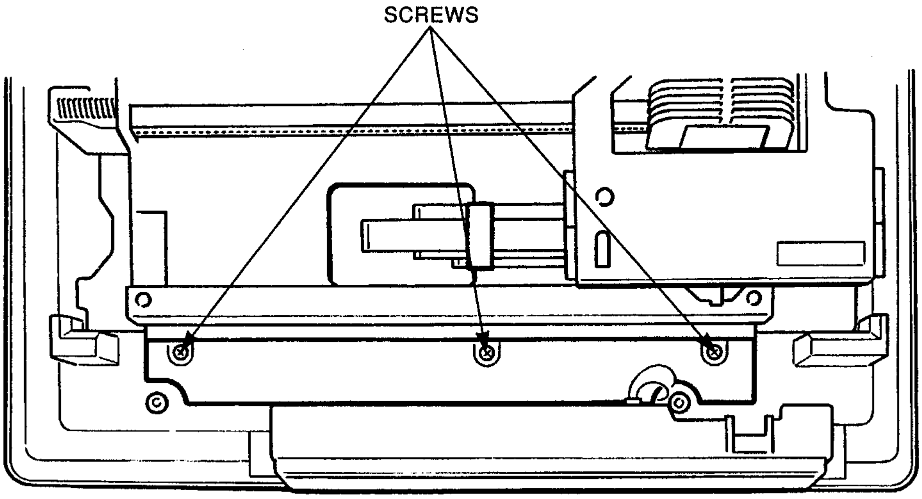


Figure 3-67 Cable Cover

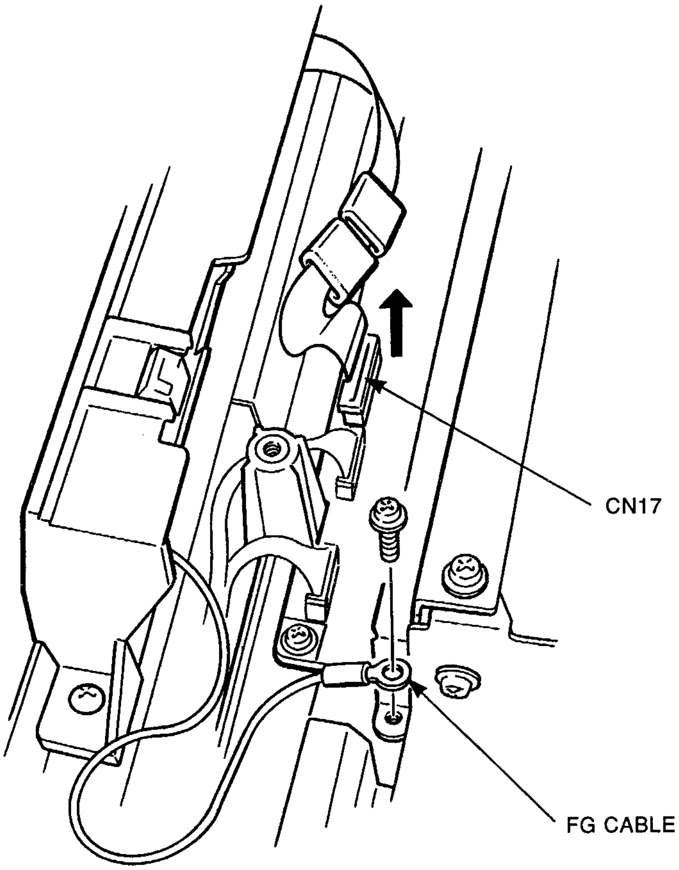

CN17
FG CABLE

Figure 3-68 Control Panel Cable

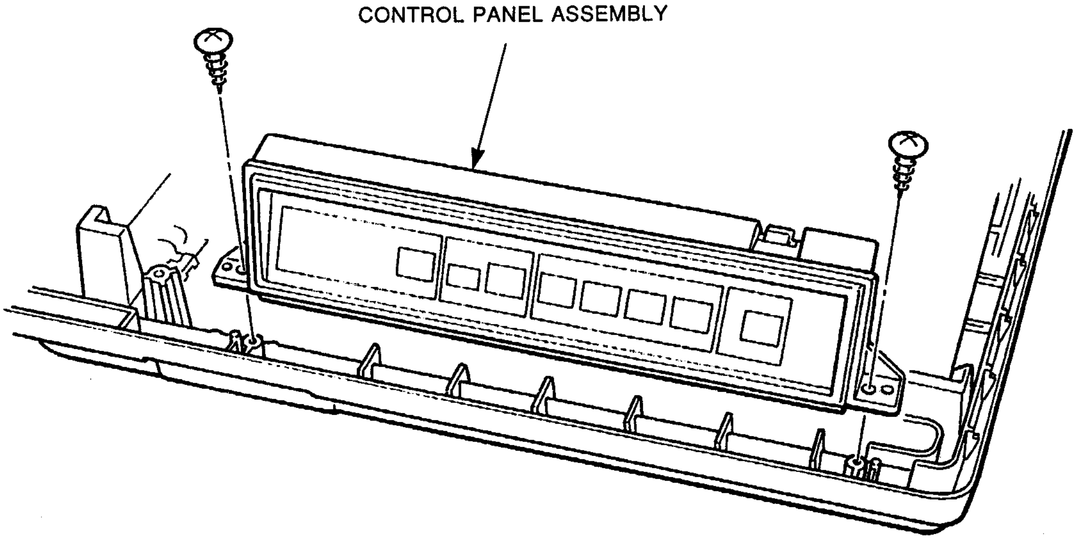
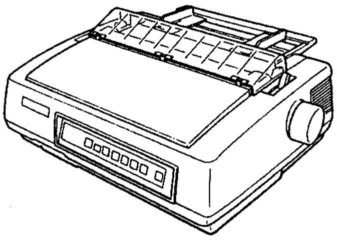

CONTROL PANEL ASSEMBLY

Figure 3-69 Control Panel Assembly

Section 4



Adjustments

The adjustment procedures in this section are designed for field-level maintenance of the Pinwriter. Refer to Section 3 for any removal procedures involved in the adjustments.

REQUIRED TOOLS

- #2 Phillips screwdriver
- Metric feeler gauges
- Adjustable wrench
- Metric ruler
- 14 mm nut driver
- Shaft retaining jig

PRINT HEAD GAP ADJUSTMENT

An improperly adjusted print head can result in smudging on one side of the page and not the other, especially with multipart forms. When the print head is adjusted properly, it operates at the optimum wire stroke to obtain a crisp and legible printout. Before performing the print head gap adjustment, check for a worn ribbon or print wires.

NOTE

In acceptance inspection, check that the print head gap is between 0.012 and 0.017 in. (0.31 and 0.43 mm) with copy control lever at position 4.
If the print quality is still not clear or the print head is replaced, follow these steps to obtain the gap measurement of 0.013 to 0.016 in. (0.34 to 0.40 mm).

1. Set the copy control lever to position 4.
2. Remove the top front cover, the print head and card holder, and then reinstall the print head.
3. Move the carrier to the left of the printer.
4. Use feeler gauge to measure the distance between the print head and platen.
5. Move the carrier to the right of the printer.
6. Use the feeler gauge to measure the distance between the print head and platen. The gap should be the same on both ends of the platen.
   If not, adjust the right side gap by turning the eccentric bushing.
7. Move the carrier to the center of the printer.
8. Measure the distance between the print head and platen (see Figure 4-1). The gap should measure between 0.013 and 0.016 in. (0.34 and 0.40 mm).
9. If the gap needs to be adjusted, remove the copy control lever mounting screw, and retighten the screw temporarily (see Figure 4-2).
10. Insert the shaft retaining jig into the hole on the left side of the guide shaft, and turn the shaft. When the correct gap has been obtained, hold the guide shaft in position while tightening the screw.
    (Tightening torque = 14 kg•cm)
11. After removing the print head, replace and adjust the card holder and then replace the print head.
12. Replace the top front cover and ribbon cartridge.

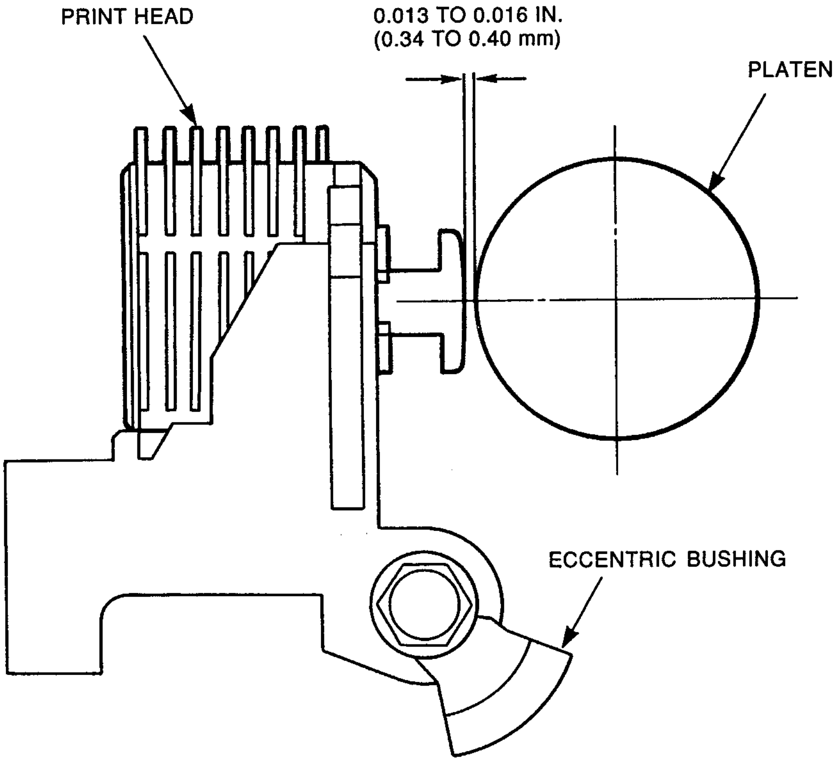

PRINT HEAD
0.013 TO 0.016 IN.
(0.34 TO 0.40 mm)
PLATEN
ECCENTRIC BUSHING

Figure 4-1 Print Head Gap

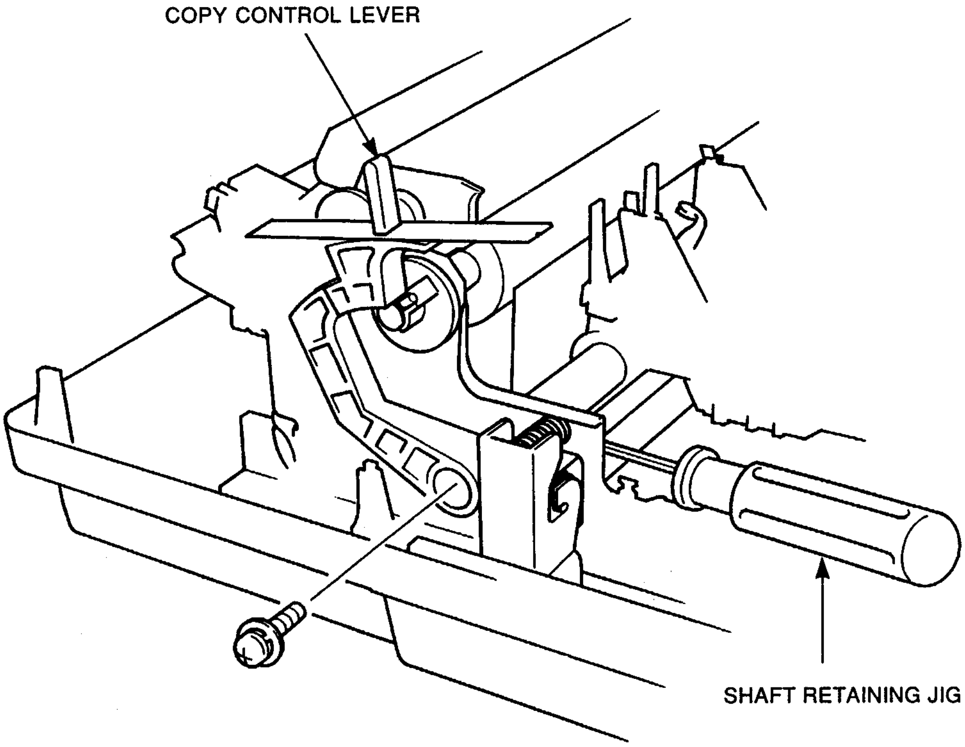

COPY CONTROL LEVER
SHAFT RETAINING JIG

Figure 4-2 Print Head Adjustment

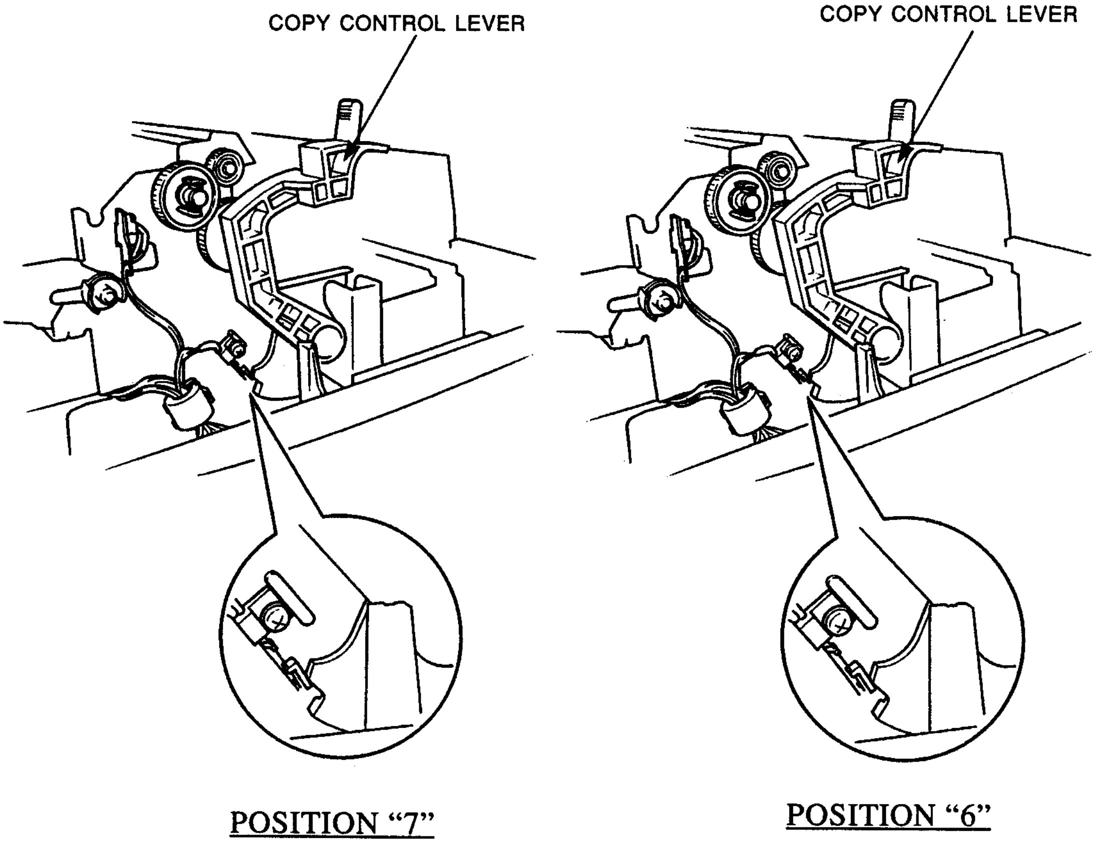
PF SENSOR ADJUSTMENT

When the PF sensor is not adjusted properly, the following conditions can occur:

- Poor printout with multipart forms.

Follow these steps to adjust the PF sensor for correct operation.

1. Set the copy control lever to position 7.
2. Remove the middle cover assembly.
3. Loosen the screw securing the PF sensor to the left side frame (see Figure 4-3).
4. Adjust the PF sensor and tighten it with the screw so that the PF sensor is ON.
5. Set the gap adjust lever to position 6, and make sure that the PF sensor is OFF.
6. Replace the middle cover assembly.



POSITION "7"   POSITION "6"

Figure 4-3 PF Sensor Adjustment

PSD POWER (B) OUTPUT VOLTAGE ADJUSTMENT

Follow these steps to adjust the power supply output voltage.

1. Connect the 115 V power supply to connector CN1 (see Figure 4-4).
2. Connect the +34 V and +5 V loads to connector CN2 (see Figure 4-4).

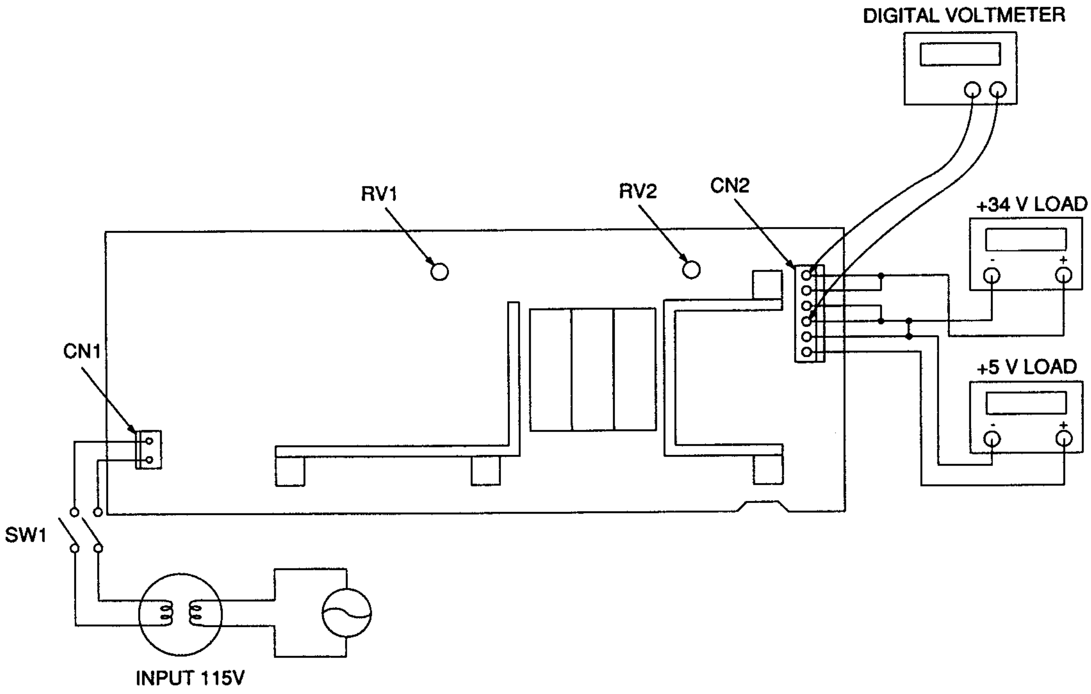


Figure 4-4 PSD Power (B) Adjustment Circuit

3. Set RV1 and RV2 knobs to the position shown below.

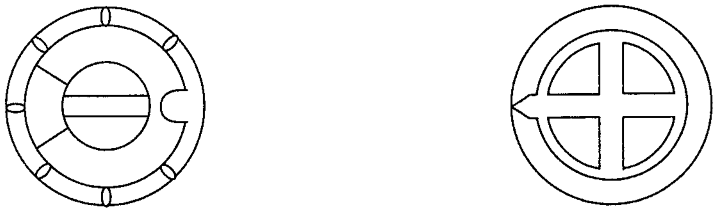


Figure 4-5 PSD Power (B) Adjusters

4. Apply no load to the +5V and +34V loads, and set SW1 to ON.
5. Set the +5V and +34V loads to 2A and 2.65A, respectively.
6. Turn the RV2 knob clockwise until the digital voltmeter reads the +34 V, and adjust it to 34 ±0.04 V.
7. After completing the adjustment, lock the RV2 knob by applying silicon rubber on it.
8. Proceed to the power supply output power adjusting procedure.

PSD POWER (B) OUTPUT POWER ADJUSTMENT

Follow these steps to adjust the power supply output power.

1. Connect the 115 V power supply to connector CN1 (see Figure 4-4).
2. Connect the +34 V and +5 V loads to connector CN2 (see Figure 4-4).
3. Apply no load to the +34 V and +5 V loads.
4. Set the input voltage to 97 V.
5. Set SW1 to ON.
6. Set the +5 V and +34 V loads to 2A and 6.5A, respectively.
7. When the +34 V output voltage is higher than 33 V, turn the RV1 knob counterclockwise until it reaches the position where the +34 V output voltage becomes lower than 33 V.
8. When the +34 V output voltage is lower than 33 V, turn the RV1 knob clockwise until it reaches the position where the +34 V output voltage becomes higher than 33V.
9. Lock the RV1 knob with silicon rubber.

PSD POWER (C) (GRP 003) OUTPUT VOLTAGE ADJUSTMENT

Follow these steps to adjust the power supply output voltage.

1. Connect the 220 to 240 V power supply to connector CN1 (see Figure 4-6).
2. Connect the +34 V and +5 V loads to connector CN2 (see Figure 4-6).

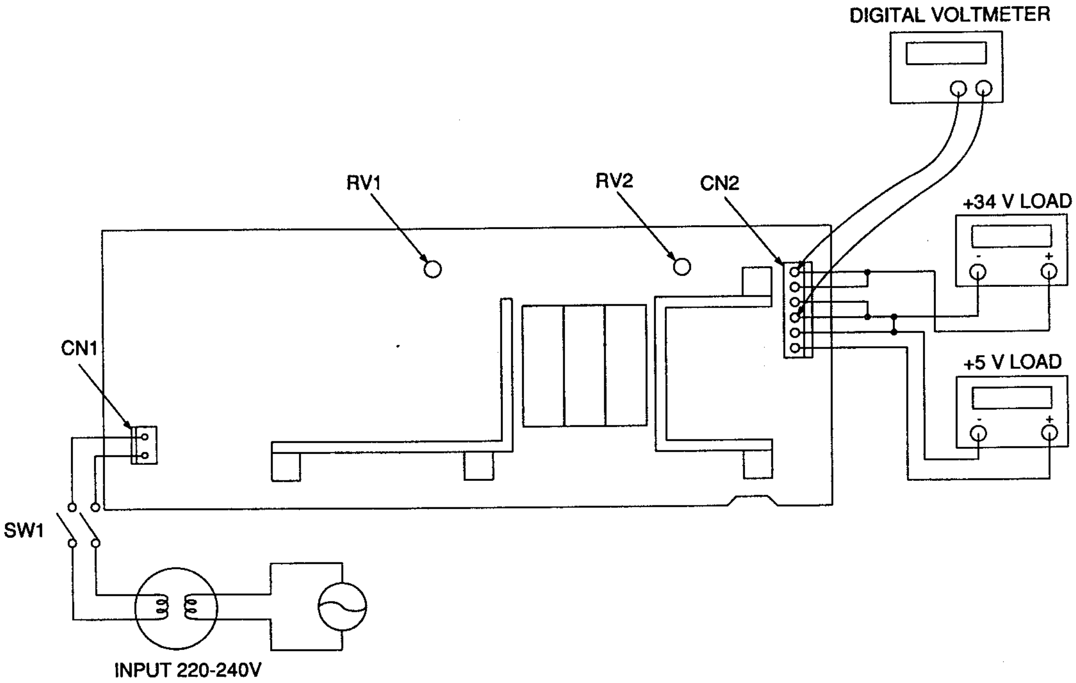


Figure 4-6 PSD Power (C) (GRP003) Adjustment Circuit

3. Set RV1 and RV2 knobs to the position shown below.

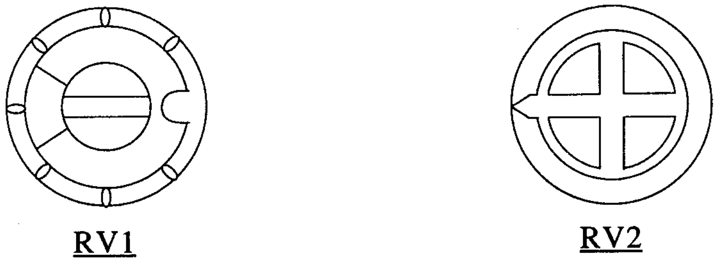


Figure 4-7 PSD Power (C) (GRP003) Adjusters

4. Apply no load to the +5 V and +34 V loads, and set SW1 to ON.
5. Set the +5 V and +34 V loads to 2A and 2.65A, respectively.
6. Turn the RV2 knob clockwise until the digital voltmeter reads the +34 V, and adjust it to 34 ±0.04 V.
7. After completing the adjustment, lock the RV2 knob by applying silicon rubber on it.
8. Proceed to the power supply output power adjusting procedure.

PSD POWER (C) (GRP003) OUTPUT POWER ADJUSTMENT

Follow these steps to adjust the power supply output voltage.

1. Connect the 220-240 V power supply to connector CN1 (see Figure 4-6).
2. Connect the +34 V and +5 V loads to connector CN2 (see Figure 4-6).
3. Apply no load to the +34 V and +5 V loads.
4. Set the input voltage to 198 V.
5. Set SW1 to ON.
6. Set the +5 V and +34 V loads to 2A and 6.5A, respectively.
7. When the +34 V output voltage is higher than 33 V, turn the knob RV1 in the direction of the arrow until it reaches the position where the +34 V output voltage becomes lower than 33 V.
8. When the +34 V output voltage is lower than 33 V, turn the RV1 knob clockwise of the arrow until it reaches the position where the +34 V output voltage becomes higher than 33 V.
9. Lock the RV1 knob with silicon rubber.

PSD POWER (C) (GRP303) OUTPUT VOLTAGE ADJUSTMENT

Follow these steps to adjust the power supply output voltage.

1. Connect the 220-240 V power supply to connector CN1 (see Figure 4-8).
2. Connect the +34 V and +5 V loads to connector CN2 (see Figure 4-8).

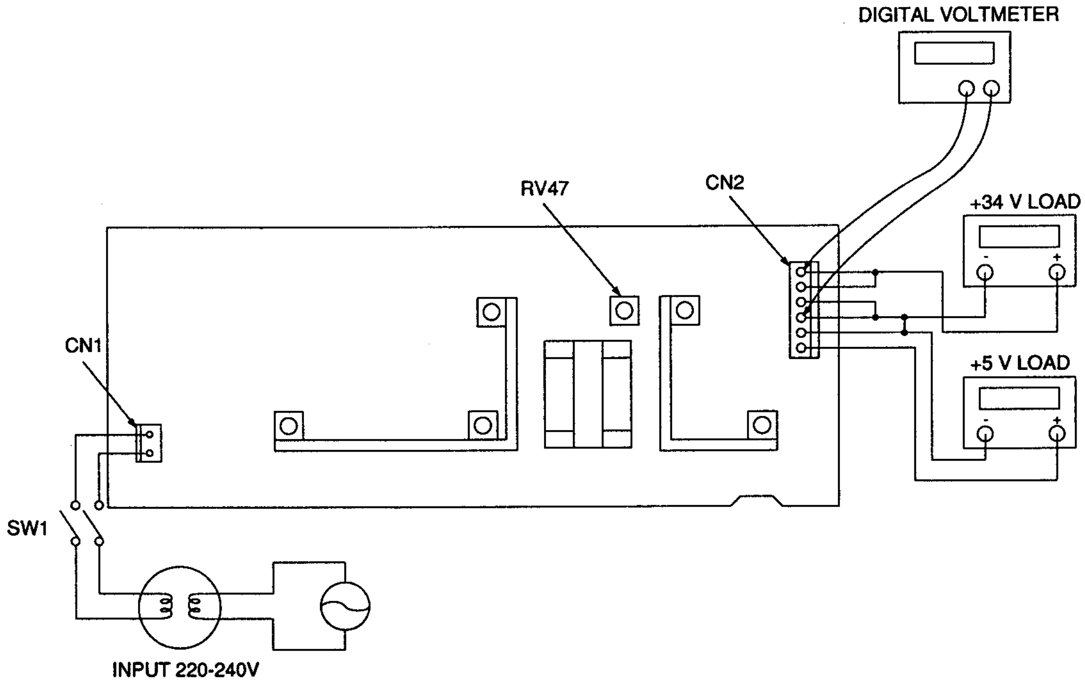
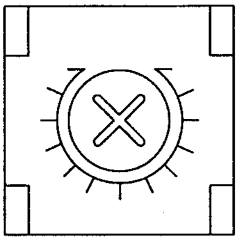


Figure 4-8 PSD Power (C) (GRP303) Adjustment Circuit

3. Turn the RV47 knob counterclockwise until it stops.

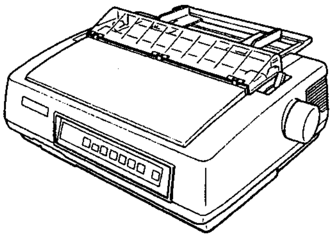


RV47

Figure 4-9 PSD Power (C) (GRP303) Adjuster

4. Apply no load to the +5 V and +34 V loads, and set SW1 to ON.
5. Set the +5 V and +34 V loads to 2A and 4.4A, respectively.
6. Turn the RV47 knob counterclockwise until the digital voltmeter reads +34 V, and adjust it to 34 ±0.2 V.
7. After completing the adjustment, lock the RV47 knob by applying silicon rubber on it.

Section 5



Preventive Maintenance

Clean and check the Pinwriter at least once a year. No other scheduled maintenance is required.

CLEANING

Inspect the entire printer for foreign material (such as bits of paper, dust, or paper clips) before performing the following cleaning procedure.

1. Using a soft lint-free cloth, remove any dust from the guide shafts and front stay.
2. Clean the base frame under the carrier assembly.
3. Use a mild detergent to clean the cover. Use a hand cleaner to remove any stains.

CAUTION

Do not use platen cleaner to clean any plastic items or surfaces. Do not use alcohol to clean the cover, the platen, or any plastic surfaces.

4. Remove any pieces of paper attached to the tractor assembly and pressure roller.

CHECKING

Run the self-test (see Section 2) to ensure that the printer is printing correctly. Then check the following items.

- Verify that the ribbon is in good condition. Replace any ribbon that is dried out or malfunctioning.
- Be sure that the paper is of high quality and is inserted properly.
- Check the gap adjust lever. Adjust it if necessary.
- Inspect the printer for any accumulation of foreign materials, such as bits of paper or paper clips.

LUBRICATION

Lubricate parts only if they have been replaced or if lubricant has been removed during a repair, cleaning, or adjustment procedure. Table 5-1 gives the lubrication requirements for each point. The designation letters in Table 5-1 correspond to the letters in Figures 5-1 through 5-6. The figures show the lubrication points.

Recommended lubricants include the following.

- Daphne Coronex Grease #2
  Use a light brush coat.
  Lube code: G

- Daphne Mechanic Oil #35 or 132G Oil
  Use 1 to 2 drops.
  Lube Code: O

Table 5-1 Lubrication Points

DESIGNATION	LOCATION	LUBRICATION CODE
Ⓐ	Contact surface of right side frame hole and paper release arm	G
Ⓑ	Contact surface of paper selection lever and paper release arm	G
Ⓒ	Contact surface of left side frame and copy control lever	G
Ⓓ	Guide shaft. Front stay.	O
Ⓔ	Piece (1) of carrier	O
Ⓕ	Contact surface of carrier frame and ribbon feed pulley, planet arm, counter gear and ribbon drive gear.	G
Ⓖ	Contact surface of planet arm and planet gear	G
Ⓗ	Contact surface of ribbon base and torque piece gear	G
Ⓘ	Contact surface of manual feed gear and platen shaft.	G

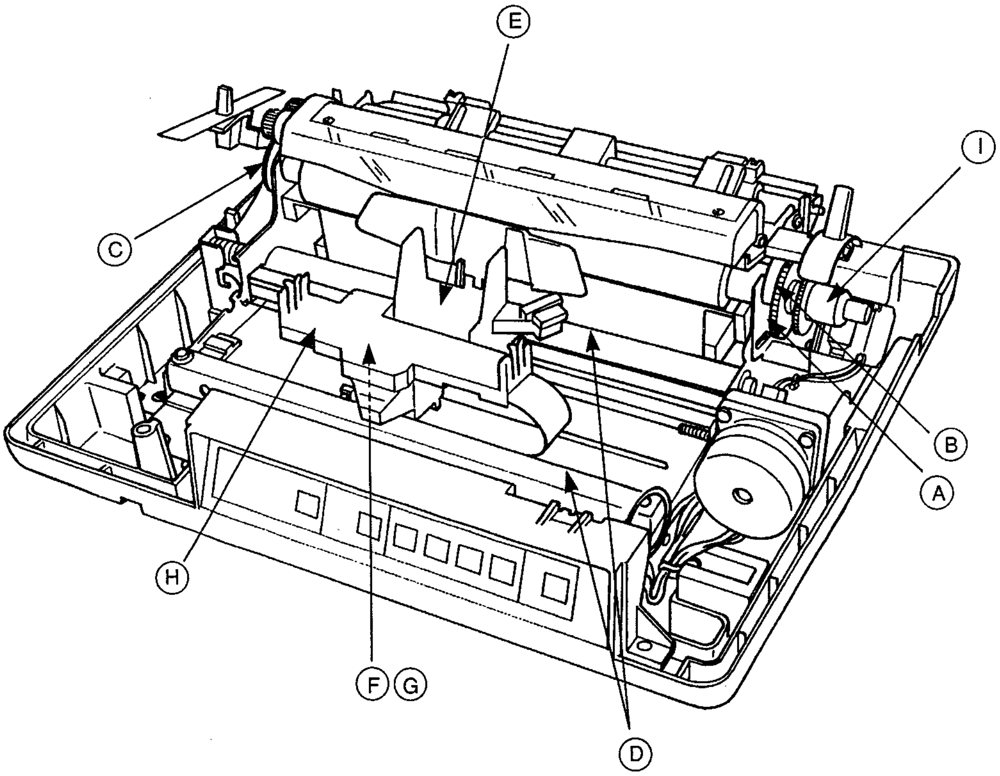


Figure 5-1 Mechanical Assembly Lubrication Points

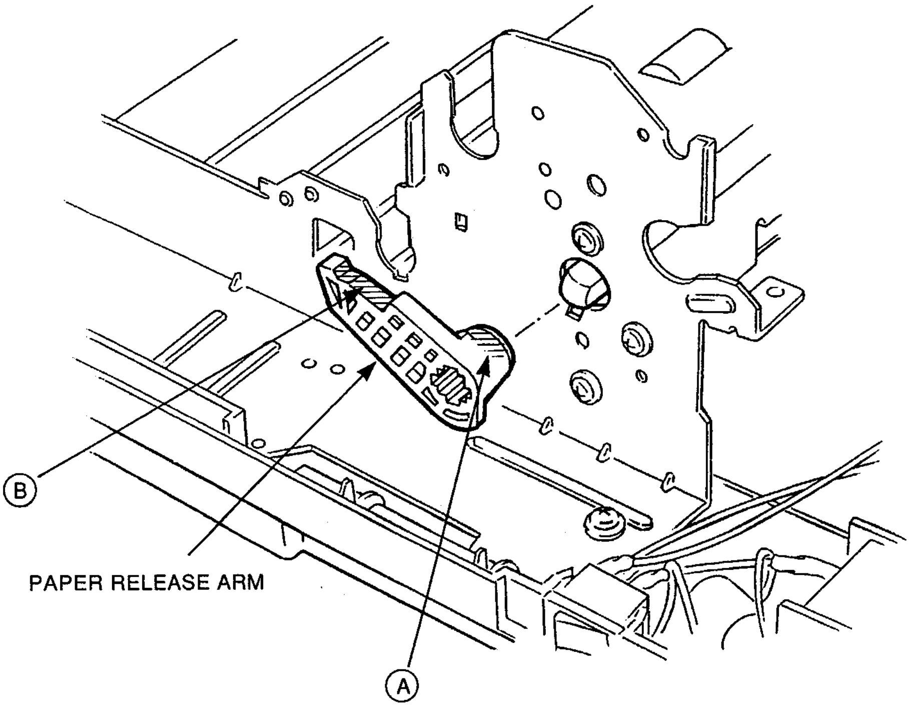

Ⓑ
PAPER RELEASE ARM
Ⓐ

Figure 5-2 Paper Release Arm Lubrication Point

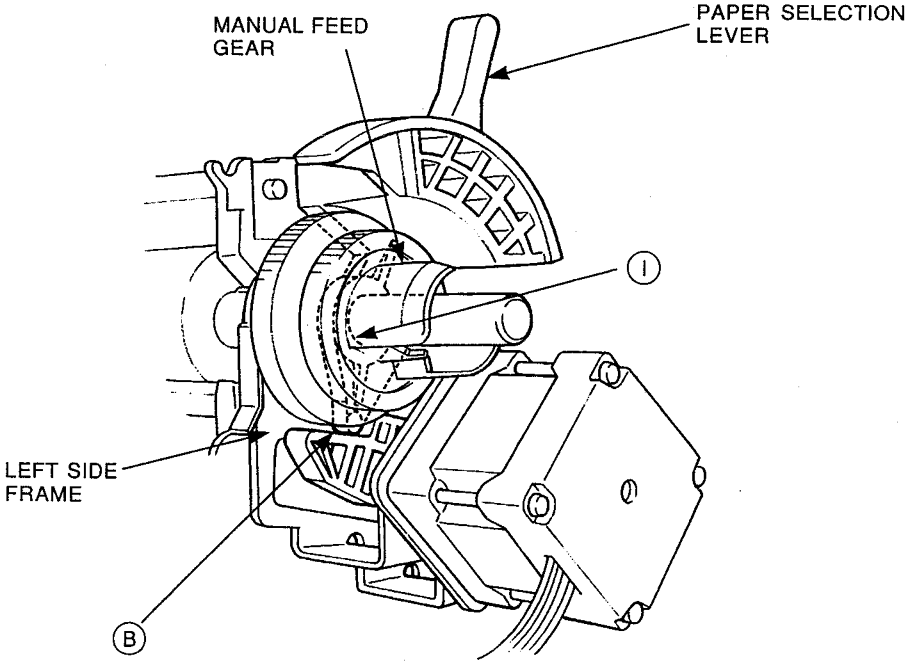

MANUAL FEED GEAR
PAPER SELECTION LEVER
Ⓘ
LEFT SIDE FRAME
Ⓑ

Figure 5-3 Paper Selection Lever Lubrication Points

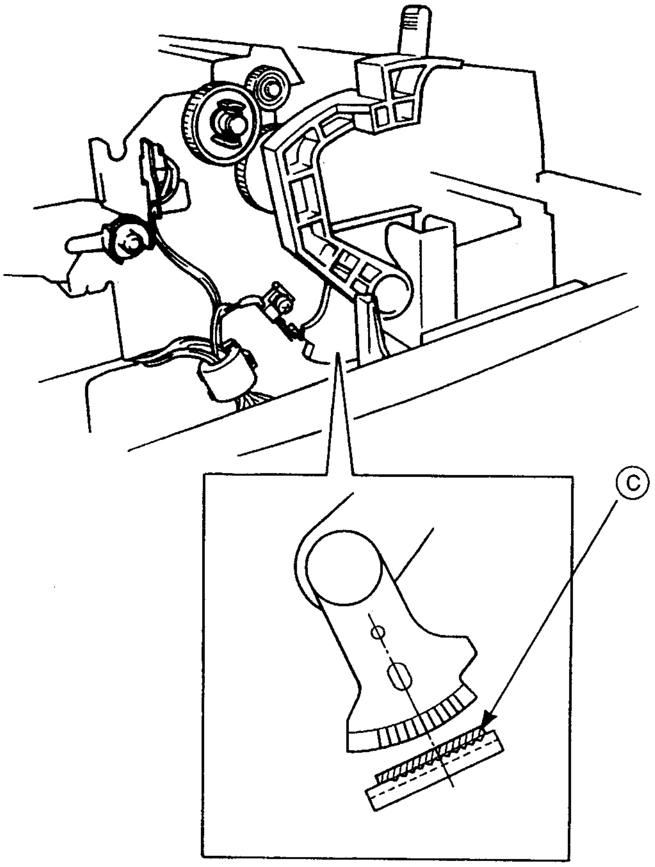


Figure 5-4 Copy Control Lever Lubrication Points

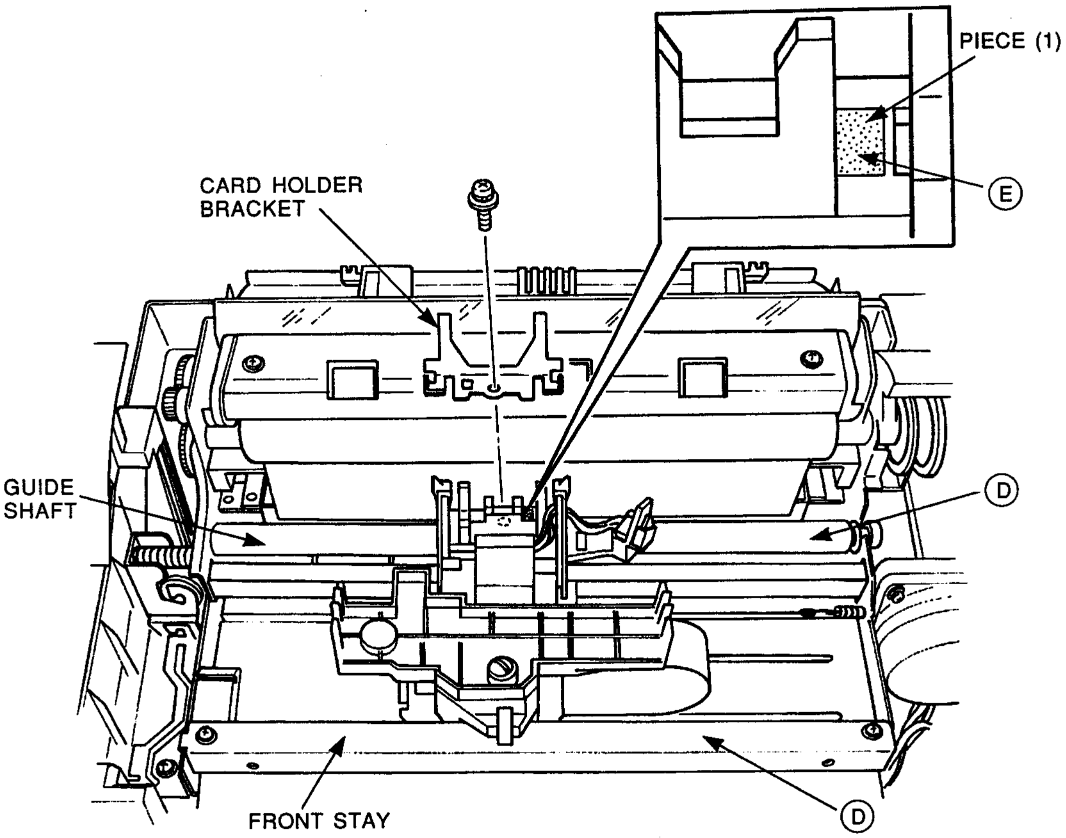

PIECE (1)
E
CARD HOLDER BRACKET
GUIDE SHAFT
D
FRONT STAY
D

Figure 5-5 Guide Shaft, Front Stay and Piece (1)

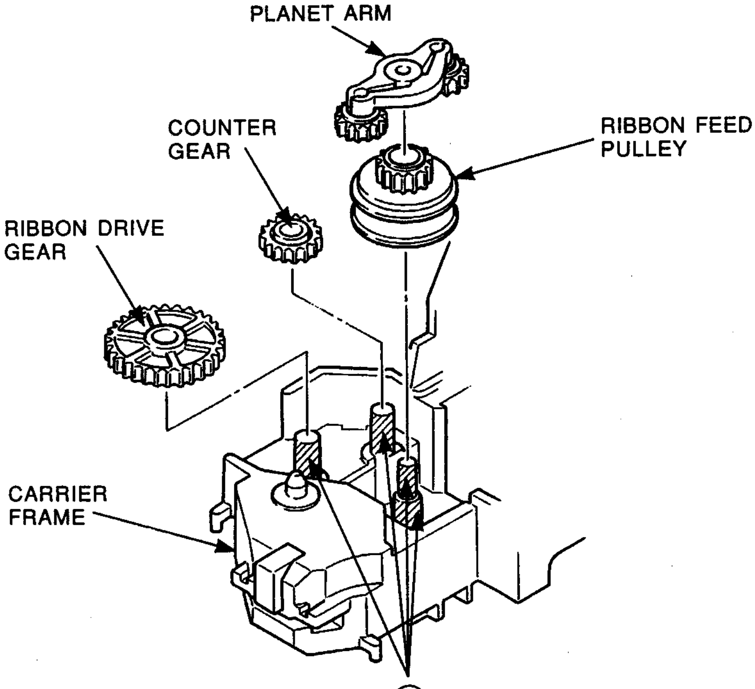

PLANET ARM
COUNTER GEAR
RIBBON FEED PULLEY
RIBBON DRIVE GEAR
CARRIER FRAME
G

Figure 5-6 Carrier Assembly Lubrication Points

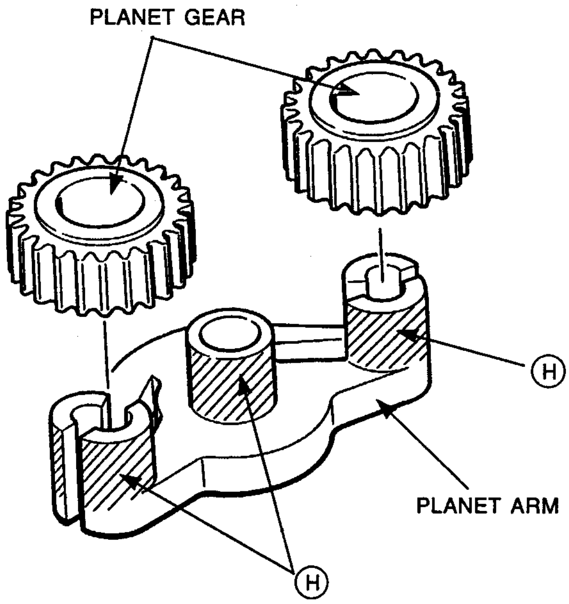

PLANET GEAR
H
PLANET ARM
H

Figure 5-7 Planet Arm Lubrication Points

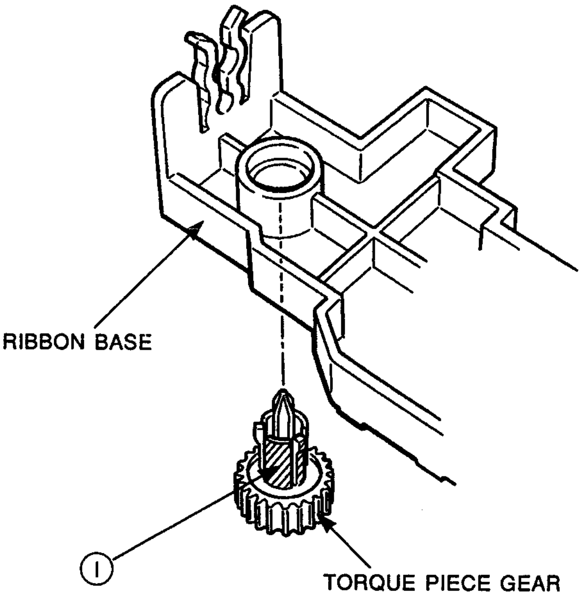
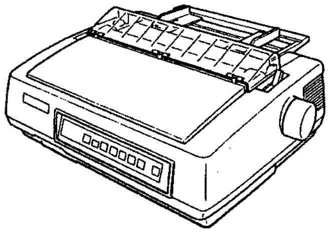

RIBBON BASE
I
TORQUE PIECE GEAR

Figure 5-8 Ribbon Base Assembly Lubrication Point



Section 6

Illustrated Parts Breakdown

This section contains optional and spare parts numbers, and the mechanical illustrated parts breakdown (IPB) for the Pinwriter P6200/P6300 and P60/P70 plus printers.

OPTIONAL PARTS

Tables 6-1 through 6-4 provide order numbers for the Pinwriter's optional parts.

Table 6-1 Ribbons

RIBBON	ORDER NUMBER
Black Nylon Ribbon	808-867928-301-A
Black Multistrike Film Ribbon	808-869921-301-A
Color Nylon Ribbon	808-867928-311-A

Table 6-2 Paper Handling Options

OPTION	ORDER NUMBER
Sheet Feeder 4613	136-009953-301-A
Sheet Feeder 4713	136-009953-601-A
Dual Bin Sheet Feeder 4714	136-009953-901-A
Pull Tractor 4619	136-009700-301-A
Pull Tractor 4719	136-009700-801-A

Table 6-3 Optional Kits

OPTION	ORDER NUMBER
Color Kit 5208	136-218469-001-A
Serial Interface Option 5207	136-218769-001-A

Table 6-4 Font Cards

FONT CARD	ORDER NUMBER
Times® Greek/Tech Math Helvetica® Greek/Tech Math	136-218775-701-A
OCR A/B Bar Code 39, UPC/EAN	136-218775-702-A
Letter Gothic	136-218775-703-A
Times 18PT/24PT	136-218775-704-A
Helvetica 18PT/24PT	136-218775-705-A
ITC Bookman® 10PT/18PT/24PT	136-218775-706-A
Super Focus Letter Gothic	136-218775-707-A
Bold Italic Prestige Pica	136-218775-708-A

SPARE PARTS

The recommended spare parts for the Pinwriter are listed in Table 6-5.

Table 6-5 Recommended Spare Parts Kit (136-260503-GRP-A) - 1/4

SPARE PART	ORDER NUMBER	QUANTITY*							
		GRP: 200	203	300	400	700	703	800	900
Bottom Guide Assembly (N)	136-846277-001-A	1	1	1	1	—	—	—	—
Bottom Guide Assembly (W)	136-846277-501-A	—	—	—	—	1	1	1	1
Paper Guide (N)	136-846286-001-A	1	1	1	1	—	—	—	—
Paper Guide (W)	136-846286-501-A	—	—	—	—	1	1	1	1
Paper Release Arm	136-846287-001-A	1	1	1	1	1	1	1	1
LF Motor Unit	136-218460-001-A	1	1	1	1	1	1	1	1
SP Motor Unit	136-218459-001-A	1	1	1	1	1	1	1	1
Platen Assembly (N)	136-218461-001-A	1	1	1	1	—	—	—	—
Platen Assembly (W)	136-218461-501-A	—	—	—	—	1	1	1	1
H.P Sensor Assembly	808-820754-001-A	1	1	1	1	1	1	1	1
Option Gear	136-846288-001-A	1	1	1	1	1	1	1	1
Sensor & Switch Assembly	808-820753-001-A	1	1	1	1	1	1	1	1
Carrier Subassembly (N)	136-846278-001-A	1	1	1	1	—	—	—	—
Carrier Subassembly (W)	136-846278-501-A	—	—	—	—	1	1	1	1
Piece (1)	136-846363-001-A	1	1	1	1	1	1	1	1
Carrier Cable (N) Assembly	136-812392-001-A	1	1	1	1	—	—	—	—
Carrier Cable (W) Assembly	136-812392-501-A	—	—	—	—	1	1	1	1
Card Holder Assembly (P60/P70 only)	136-846275-001-A	—	—	1	—	—	—	1	—
Card Holder (S. T. D) Assembly	136-846275-40-1-A	1	1	—	1	1	1	—	1
Planetarium Gear	136-846358-001-A	2	2	2	2	2	2	2	2
Planetarium Arm Subassembly	136-854350-001-A	1	1	1	1	1	1	1	1
Eccentric Bushing	136-846383-001-A	1	1	1	1	1	1	1	1
Gap Adjust Lever	136-846285-001-A	1	1	1	1	1	1	1	1
Tension Arm Assembly	136-846302-001-A	1	1	1	1	1	1	1	1
Ribbon Base (Black) Assembly	136-218465-001-A	1	1	1	1	1	1	1	1

Table 6-5 Recommended Spare Parts Kit (136-260503-GRP-A) - 2/4

SPARE PART	ORDER NUMBER	QUANTITY*							
		GRP: 200	203	300	400	700	703	800	900
Tractor Unit (N)	136-218463-001-A	1	1	1	1	—	—	—	—
Tractor Unit (W)	136-218463-501-A	—	—	—	—	1	1	1	1
Feed Roller Unit (N)	136-218464-001-A	1	1	1	1	—	—	—	—
Feed Roller Unit (W)	136-218464-501-A	—	—	—	—	1	1	1	1
Print Head Assembly	136-218474-002-A	1	1	1	1	1	1	1	1
Top Cover Assembly	136-215360-001-A	1	1	—	—	—	—	—	—
Top Cover Assembly	136-215360-301-A	—	—	1	—	—	—	—	—
Top Cover Assembly	136-215360-401-A	—	—	—	1	—	—	—	—
Top Cover Assembly	136-215360-501-A	—	—	—	—	1	1	—	—
Top Cover Assembly	136-215360-801-A	—	—	—	—	—	—	1	—
Top Cover Assembly	136-215360-901-A	—	—	—	—	—	—	—	1
Rear Cover Assembly (S)	136-218953-001-A	1	1	—	—	—	—	—	—
Rear Cover Assembly (S)	136-218953-301-A	—	—	1	—	—	—	—	—
Rear Cover Assembly (S)	136-218953-401-A	—	—	—	1	—	—	—	—
Rear Cover Assembly (L)	136-218953-501-A	—	—	—	—	1	1	—	—
Rear Cover Assembly (L)	136-218953-801-A	—	—	—	—	—	—	1	—
Rear Cover Assembly (L)	136-218953-901-A	—	—	—	—	—	—	—	1
PSD Power (B)	808-891104-002-A	1	—	—	1	1	—	—	1
PSD Power (C)-Japan Production	808-891104-003-A	—	1	—	—	—	1	—	—
PSD Power (C)-U.K. Production	808-891104-303-A	—	—	1	—	—	—	1	—
G8ESPA PCB Assembly	136-436268-001-A	1	1	—	—	1	1	—	—
G8ESR PCB Assembly	136-436270-001-A	—	—	1	—	—	—	1	—
G8ESQA PCB Assembly	136-436269-001-A	—	—	—	1	—	—	—	1
G8EST PCB Assembly	136-436272-001-A	1	1	—	1	1	1	—	1
G8ESV PCB Assembly	136-436274-001-A	—	—	1	—	—	—	1	—

Table 6-5 Recommended Spare Parts Kit (136-260503-GRP-A) - 3/4

SPARE PART	ORDER NUMBER	QUANTITY*							
		GRP: 200	203	300	400	700	703	800	900
PSD Operator Panel	808-818170-301-A	1	1	1	1	1	1	1	1
Silent Canopy Assembly (S)	136-217750-001-A	1	1	—	—	—	—	—	—
Silent Canopy Assembly (S)	136-217750-301-A	—	—	1	—	—	—	—	—
Silent Canopy Assembly (S)	136-217750-401-A	—	—	—	1	—	—	—	—
Silent Canopy Assembly (L)	136-217750-501-A	—	—	—	—	1	1	—	—
Silent Canopy Assembly (L)	136-217750-801-A	—	—	—	—	—	—	1	—
Silent Canopy Assembly (L)	136-217750-901-A	—	—	—	—	—	—	—	1
Ribbon Feed Pulley	136-846354-001-A	1	1	1	1	1	1	1	1
Ribbon Feed Wire Assembly	808-812396-001-A	1	1	1	1	—	—	—	—
Ribbon Feed Wire Assembly	808-812396-501-A	—	—	—	—	1	1	1	1
Tractor Assembly R	808-868140-011-A	1	1	1	1	1	1	1	1
Tractor Assembly L	808-868140-012-A	1	1	1	1	1	1	1	1
Carrier Cable Cover	136-843457-001-A	1	1	—	—	1	1	—	—
Carrier Cable Cover	136-843457-301-A	—	—	1	—	—	—	1	—
Carrier Cable Cover	136-843457-401-A	—	—	—	1	—	—	—	1
POW S/W Cable	808-857767-001-A	1	—	—	1	1	—	—	1
POW S/W Cable	808-857767-002-A	—	1	1	—	—	1	1	—
Platen Knob	136-846283-001-A	1	1	1	1	1	1	1	1
Sheet Guide	136-846416-001-A	1	1	—	—	—	—	—	—
Sheet Guide	136-846416-301-A	—	—	1	—	—	—	—	—
Sheet Guide	136-846416-401-A	—	—	—	1	—	—	—	—
Sheet Guide	136-846416-501-A	—	—	—	—	1	1	—	—
Sheet Guide	136-846416-801-A	—	—	—	—	—	—	1	—
Sheet Guide	136-846416-901-A	—	—	—	—	—	—	—	1
Paper Set Piece (L)	136-846418-001-A	1	1	—	—	1	1	—	—

Table 6-5 Recommended Spare Parts Kit (136-260503-GRP-A) - 4/4

SPARE PART	ORDER NUMBER	QUANTITY* GRP: 200	203	300	400	700	703	800	900
Paper Set Piece (L)	136-846418-301-A	—	—	1	—	—	—	1	—
Paper Set Piece (L)	136-846418-401-A	—	—	—	1	—	—	—	1
Paper Set Piece (R)	136-846419-001-A	1	1	—	—	1	1	—	—
Paper Set Piece (R)	136-846419-301-A	—	—	1	—	—	—	1	—
Paper Set Piece (R)	136-846419-401-A	—	—	—	1	—	—	—	1

* GRP 200: Model P6200, 115 V (Japan Production)
GRP 203: Model P60/P6200, 230 V (Japan Production)
GRP 300: Model P60, 230 V (U.K. Production)
GRP 400: Model P6200, 115 V (U.S.A. Production)
GRP 700: Model P6300, 115 V (Japan Production)
GRP 703: Model P70/P6300, 230 V (Japan Production)
GRP 800: Model P70, 230 V (U.K. Production)
GRP 900: Model P6300, 115 V (U.S.A. Production)

ILLUSTRATED PARTS BREAKDOWN

The following explains the organization of the parts list that accompanies each IPB.

• Item	Indicates the item numbers referred to in the callouts.
• Part Number	Provides the NEC part number for ordering spare or replacement parts. Attaching hardware, such as screws, nuts, and washers, are described with six codes as shown in Figure 6-1. The screw in Figure 6-1 is a galvanized pan-head metric screw with cross groove, where nominal diameter is 3 mm and length is 6 mm. The codes are described in Table 6-6.
• Description	Provides a brief description of the part.
• Quantity	Indicates the number of parts per unit.

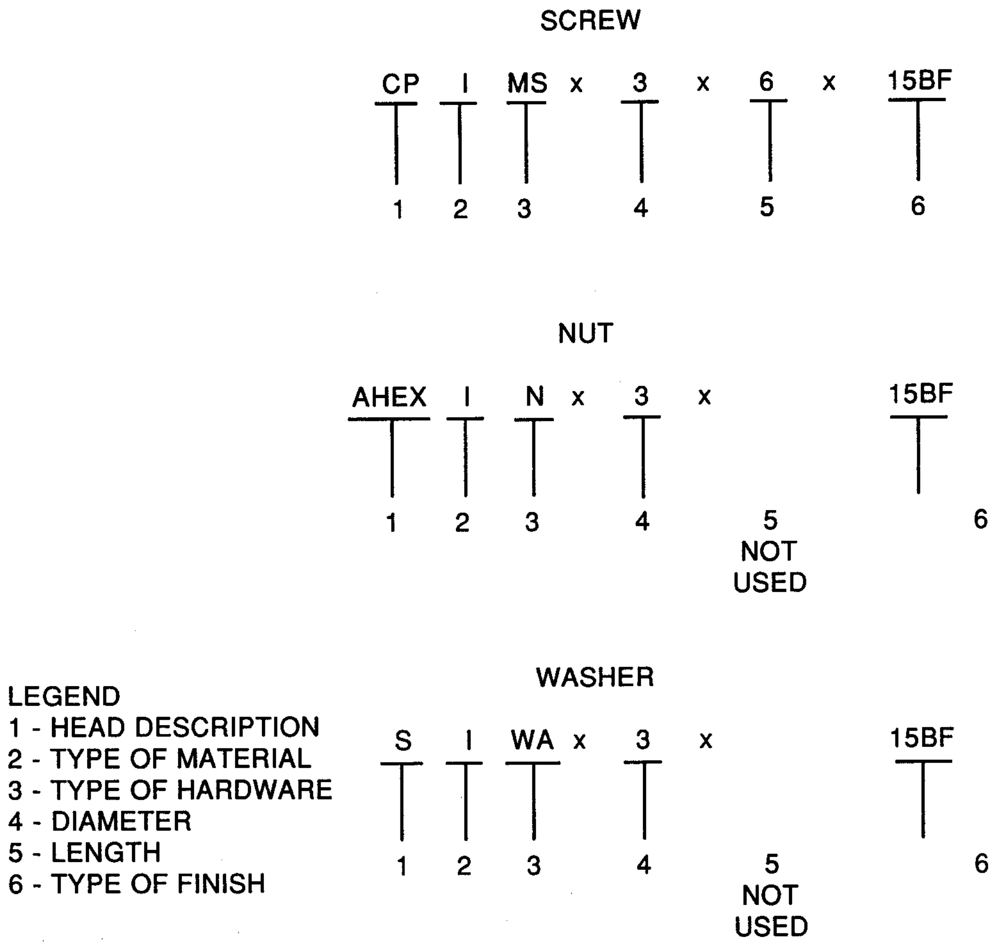

SCREW
CP I MS x 3 x 6 x 15BF
1 2 3 4 5 6
NUT
AHEX I N x 3 x 15BF
1 2 3 4 5 NOT USED 6
WASHER
S I WA x 3 x 15BF
1 2 3 4 5 NOT USED 6
LEGEND
1 - HEAD DESCRIPTION
2 - TYPE OF MATERIAL
3 - TYPE OF HARDWARE
4 - DIAMETER
5 - LENGTH
6 - TYPE OF FINISH

Figure 6-1 Typical Codes for Attaching Hardware

Table 6-6 Typical Codes for Attaching Hardware

CALLOUT	CODE	DESCRIPTION
1	CP	Pan-head screw with cross groove
	CF	Flat-head screw with cross groove
	L-CP	CP (see above) with spring washer
	P-CP	CP with polished washer
	S-CP	CP with small washer
	PL-CP	CP with polished and spring washers
	SL-CP	CP with small and spring washers
	HEX	Hexagon-head screw
	AHEX	A-type hexagon nut
	BHEX	B-type hexagon nut
	S	Small washer
	P	Polished washer
	#2xL	Spring washer
2	I	Iron
	B	Brass
	ST	Spring steel
3	MS	Metric screw
	N	Nut
	WA	Washer
4	x mm	Nominal diameter in mm
5	x mm	Length of screw in mm
6	15BF	Galvanized, lustrous coloration, chromate finish
	3GF	Lustrous nickel-plated finish

PART NAME	PART NUMBER	FIG.NO.
PINWRITER P60/P6200	136-218451-GRP-0*1	6-4
PRINTER UNIT(N)	136-218454-GRP-A*2	6-4
MECHANISM UNIT (N)	136-218455-001-A	6-6
FRAME UNIT (N)	136-218456-001-A	6-8
FRAME ASSEMBLY (N)	136-218457-001-A	6-10
RIGHT SIDE FRAME SUBASSEMBLY	136-846265-001-A	6-12
LEFT SIDE FRAME SUBASSEMBLY	136-846265-002-A	6-12
MAIN STAY ASSEMBLY (N)	136-218466-001-A	6-12
MAIN STAY (N)	136-846337-001-A	6-14
REAR PAPER END LEVER	136-846344-001-A	6-14
BOTTOM MDL LEVER	136-846345-001-A	6-14
ROLLER SUPPORT	136-846339-001-A	6-14
ROLLER SUPPORT SPRING	136-846306-001-A	6-14
ROLLER SUPPORT BRACKET	136-846338-001-A	6-14
RELEASE SHAFT (N)	136-846340-001-A	6-14
PRESSURE ROLLER (N)	136-846341-001-A	6-14
PRESSURE ROLLER (F)	136-846342-001-A	6-14
PRESSURE SPRING (N)	136-846406-001-A	6-14
BOTTOM GUIDE ASSEMBLY (N)	136-846277-001-A	6-14
SCREW, STCS-CPIMSx4x6x15BF	808-802445-406-A	6-14
FRONT STAY (N)	136-846297-001-A	6-12
PAPER GUIDE (N)	136-846286-001-A	6-12
WIRE SADDLE WS-1NS	808-811031-001-A	6-12
SCREW, STCS-CPIMSx4x6x15BF	808-802445-406-A	6-12

A B C D

Figure 6-2 Family Tree - P60/P6200 (1/13)

A B C D

PAPER RELEASE ARM	136-846287-001-A	6-10
LF MOTOR UNIT	136-218460-001-A	6-10
LF MOTOR FRAME SUBASSEMBLY	136-846276-001-A	6-10
SLIDE GEAR	136-846311-001-A	6-10
SLIDE GEAR SPRING	136-846312-001-A	6-10
LF GEAR	136-846310-001-A	6-10
LF MOTOR ASSEMBLY	808-869546-001-A	6-10
LF PLATE	136-854346-001-A	6-10
SCREW, PL-CPIMSx3x8x15BF	805-300003-008-0	6-10
SP MOTOR UNIT	136-218459-001-A	6-10
SP MOTOR BRACKET	136-846308-001-A	6-10
SP MOTOR ASSEMBLY	808-869545-001-A	6-10
FG PLATE (SP)	136-846309-001-A	6-10
SCREW, STCS-CPIMSx4x10x15BF	808-802445-410-A	6-10
PLATEN ASSY (N)	136-218461-001-A	6-10
PLATEN (N)	136-846313-001-A	6-16
PLATEN BUSHING (LH)	136-846314-001-A	6-16
PLATEN BUSHING (RH)	136-846314-002-A	6-16
PLATEN THRUST SHIM	136-768495-0	6-16
OPTION DRIVE GEAR	136-846315-001-A	6-16
PAPER SELECTION LEVER	136-846316-001-A	6-16
PLATEN GEAR	136-846317-001-A	6-16
MANUAL FEED GEAR	136-846318-001-A	6-16
SPRING PIN	803-010022-314-0	6-16

A B C D

Figure 6-2 Family Tree - P60/P6200 (2/13)

A B C D

OPTION GEAR	136-846288-001-A	6-10
H.P SENSOR ASSEMBLY	808-820754-001-A	6-10
SENSOR & SW ASSEMBLY	808-820753-001-A	6-10
CARRIER UNIT (N)	136-218462-001-A	6-10
CARRIER ASSEMBLY (N)	136-846266-001-A	6-10
CARRIER SUBASSEMBLY (N)	136-846278-001-A	6-18
CARRIER FRAME SUBASSEMBLY	136-846267-001-A	6-18
SLIDE SET PIECE	136-824597-001-B	6-18
CLAMP LEVER (LH)	136-846386-001-A	6-18
CLAMP LEVER (RH)	136-846386-002-A	6-18
PLANETARIUM GEAR	136-846358-001-A	6-18
PLANETARIUM ARM	136-846357-001-A	6-18
FRICTION SPRING	136-854349-001-A	6-18
RIBBON FEED PULLEY	136-846354-001-A	6-18
RIBBON FEED WIRE (N) ASSEMBLY	808-812396-001-A	6-18
PULLEY CASE	136-846385-001-A	6-18
COUNTER GEAR	136-846359-001-A	6-18
RIBBON DRIVE GEAR	136-846360-001-A	6-18
TIMING BELT (N)	808-812393-001-A	6-18
BELT HOLDER	136-846361-001-A	6-18
RIBBON SENSOR ASSEMBLY	808-820752-001-A	6-18
PHOTO SENSOR CLAMP PLATE	136-824599-001-A	6-18
CARRIER FRAME COVER	136-846362-001-A	6-18
CARRIER FG SPRING (LH)	136-846367-001-A	6-18
CARRIER FG SPRING (RH)	136-846367-002-A	6-18
PIECE (1)	136-846363-001-A	6-18
SCREW, PL-CPIMSx3x8x15BF	805-300003-008-0	6-18

A B C D E

Figure 6-2 Family Tree - P60/P6200 (3/13)

A B C D E

CARRIER CABLE (N) ASSEMBLY	808-812392-001-A	6-10
GUIDE SHAFT (N)	136-846284-001-A	6-10
ECCENTRIC BUSHING	136-846383-001-A	6-10
GAP ADJUST LEVER	136-846285-001-A	6-10
LEVER SHEET	136-846438-002-A	6-10
TENSION ARM ASSEMBLY	136-846302-001-A	6-10
DRIVEN PULLEY ASSEMBLY	136-846371-001-A	6-10
DRIVEN BUSHING (ROLLER BEARING)	808-868150-001-A	6-10
DRIVEN PULLEY SHAFT	136-846380-001-A	6-10
TENSION ARM	136-846370-001-A	6-10
DRIVEN PULLEY COLLAR	136-854413-001-A	6-10
BELT TENSION SPRING	136-846373-001-A	6-10
WIRE TENSION SPRING	136-846356-001-A	6-10
SCREW, STCS-CPIMSx4x6x15BF	808-802445-406-A	6-10
SCREW, PL-CPIMSx4x10x15BF	808-300004-010-A	6-10
SCREW, STSL-CPIMSx3x8x15BF	808-802446-308-A	6-10
VINYL TWIST-TIE	808-835074-005-A	6-10
RIBBON BASE (BLACK) ASSEMBLY	136-218465-001-A	6-8
COLOR RIBBON BASE UNIT	136-218468-001-A	6-8
TRACTOR UNIT (N)	136-218463-001-A	6-8
TRACTOR FRAME (N)	136-846319-001-A	6-19
TRACTOR DRIVE SHAFT (N)	136-846320-001-A	6-19
TRACTOR SUPPORT SHAFT(N)	136-846321-001-A	6-19

A B C D

Figure 6-2 Family Tree - P60/P6200 (4/13)

A B C D

		TRACTOR ASSEMBLY (L)		808-868140-012-A	6-19
		TRACTOR ASSEMBLY (R)		808-868140-011-A	6-19
		TRACTOR BUSHING (LH)		136-846322-002-A	6-19
		TRACTOR BUSHING (RH)		136-846322-001-A	6-19
		CENTER GUIDE		136-824533-001-A	6-19
		TRACTOR GEAR		136-846323-001-A	6-19
		SPECIAL RETAINER		136-854347-001-A	6-19
	FEED ROLLER UNIT (N)			136-218464-001-A	6-8
		FEED ROLLER FRAME ASSEMBLY (N)		136-846273-001-A	6-21
			FEED ROLLER FRAME (N)	136-846331-001-A	6-21
			FRICTION MDL LEVER (N)	136-846332-001-A	6-21
			MDL LEVER BUSHING	136-846305-001-A	6-21
		FEED ROLLER (N)		136-846326-001-A	6-21
		FEED ROLLER SHAFT BUSHING		136-846328-001-A	6-21
		FEED ROLLER GEAR		136-846329-001-A	6-21
		FEED ROLLER COVER (N)		136-846330-001-A	6-21
		BAIL ROLLER GUIDE ASSEMBLY (N)		136-218458-001-A	6-21
			BAIL ROLLER GUIDE (N)	136-846298-001-A	6-21
			SUPPORT SHAFT (N)	136-846368-001-A	6-21
			FEED ASSIST ROLLER	136-846369-001-A	6-21
		SPECIAL SCREW		136-846304-001-A	6-21
	SCREW, STCS-CPIMSx4x6x15BF			808-802445-406-A	6-8
MSC-24 P/H ASSEMBLY				136-218474-002-A	6-6

A B

Figure 6-2 Family Tree - P60/P6200 (5/13)

A B

HOUSING UNIT	136-215357-GRP-A*3	6-6
BASE COVER ASSEMBLY (N)	136-215363-GRP-A*3	6-6
BASE COVER SUBASSEMBLY	136-217749-GRP-A*3	6-23
BASE CHASSIS	136-843454-001-A	6-23
FRAME FOOT	136-835336-001-A	6-23
FG PLATE	136-843459-001-A	6-23
SPACER	136-846883-001-A	6-23
WIRE SADDLE	808-811031-001-A	6-23
SCREW, PL-CPIMSx3x6x15BF	805-300003-006-0	6-23
SCREW, SL-CPIMSx4x12x15BF	805-310004-012-0	6-23
TAPPING SCREW	808-802044-408-0	6-23
UPPER COVER ASSEMBLY (N)	136-215358-GRP-A*3	6-6
MIDDLE COVER ASSEMBLY	136-215359-GRP-A*3	6-25
MIDDLE COVER (S)	136-843467-GRP-A*3	6-25
SPECIAL SCREW	808-814333-A	6-25
TOP COVER ASSEMBLY	136-215360-GRP-A*3	6-25
TOP COVER SUBASSEMBLY	136-217747-GRP-A*3	6-25
CANOPY (S)	136-846412-GRP-A*3	6-25
REAR COVER ASSEMBLY	136-218953-GRP-A*3	6-25
REAR COVER (S)	136-846414-GRP-A*3	6-25
SEPARATOR	136-846880-GRP-A*3	6-25
TAPPING SCREW	808-802044-408-0	6-25
SCREW, CPIMSx4x8x3GF	805-000104-008-0	6-6
WASHER, #2STLWAx4x3GF	808-866295-102-A	6-6
WASHER, PIWAx4x3GF	805-610104-0	6-6

A B

Figure 6-2 Family Tree - P60/P6200 (6/13)

A B

	PSD OPERATOR PANEL		808-818170-301-A	6-6
		OPERATOR PANEL	136-846432-301-A	6-27
		OPERATOR PANEL SHEET	136-846425-301-A	6-27
		OPERATOR PANEL PCB ASSEMBLY	808-818170-602-A	6-27
		CORE ASSEMBLY	136-789708-001-A	6-27
		SCREW, #2CPTSx2.6x6x15BF	805-060026-006-0	6-27
	CARD HOLDER ASSY		136-846275-GRP-A*[10]	6-18
		CARD HOLDER SUBASSEMBLY	136-854348-GRP-A*[10]	6-18
		CARD HOLDER BRACKET	136-846364-GRP-A*[10]	6-18
	POWER BOARD		808-891104-GRP-A*[4]	6-6
	MOTHER BOARD		136-XXXXXX-XXX-A*[5]	6-6
	CONNECTION BOARD		136-XXXXXX-001-A*[6]	6-6
	DC CABLE		808-857768-101-A	6-6
	PLATEN KNOB		136-846283-001-A	6-6
	FONT HOLDER		136-843451-GRP-A*[3]	6-6
	SHIELD COVER ASSEMBLY		136-217753-001-A	6-6
	CABLE COVER		136-843463-GRP-A*[3]	6-6
	CARRIER CABLE COVER		136-843457-GRP-A*[3]	6-6
	POWER SWITCH CABLE		808-857767-GRP-A*[7]	6-6
	SHIELD PLATE		136-846894-001-A	6-6
	FG SPRING		136-846906-001-A	6-6
	SCREW, PL-CPIMSx5x8x15BF		805-300005-008-0	6-6
	SCREW, BCBTSx4x10x15BF		808-802044-410-0	6-6
	SCREW, PL-CPIMSx3x8x15BF		805-300003-008-0	6-6
	SCREW, PL-CPIMSx4x8x15BF		805-300004-008-0	6-6
	SPECIAL SCREW		136-852788-001-A	6-6
	SCREW, PL-CPIMSx3x10x15BF		805-300003-010-0	6-6
LOGO LABEL			136-707134-GRP-A*[8]	6-4
CONTROL NAME PLATE			136-707137-GRP-A*[8]	6-4

A

Figure 6-2 Family Tree - P60/P6200 (7/13)

A

SHEET GUIDE		136-846416-GRP-A*3	6-4
POWER CODE SET		808-XXXXXX-XXX-A*9	6-4
BLACK NYLON RIBBON		808-867928-301-A	6-4
BLACK MULTISTRIKE FILM RIBBON		808-869921-301-A	6-4
COLOR NYLON RIBBON		808-867928-311-A	6-4
REFERENCE SHEET		136-843464-001-A	6-4
PAPER SET PIECE (L)		136-846418-GRP-A*3	6-4
PAPER SET PIECE (R)		136-846419-GRP-A*3	6-4
SILENT CANOPY ASSEMBLY		136-217750-GRP-A*3	6-4
RS-232C KIT		136-217741-001-A	6-4
	SERIAL I/F CASE (U)	136-846899-001-A	6-37
	SERIAL I/F CASE (L)	136-846900-001-A	6-37
	SET SCREW	136-846884-001-A	6-37
	G8ESW PCB ASSEMBLY	136-436275-A	6-37
	SCREW, PCBTSTx3x8x3GF	808-802172-308-0	6-37
	SCREW, PCBTSx3x12x3GF	808-802172-312-0	6-37
TRACTOR UNIT (S)		136-218470-001-A	6-4
	SIDE FRAME (R) SUBASSEMBLY	136-789127-001-A	6-39
	SIDE FRAME (L) SUBASSEMBLY	136-789127-002-A	6-39
	LOCK SPRING	136-789132-A	6-39
	IDLE GEAR 1	136-789143-A	6-39
	GEAR 2	136-789144-A	6-39
	CENTER GUIDE	136-789138-A	6-39
	TRACTOR GEAR	136-789140-A	6-39
	DRIVE SHAFT (S)	136-789141-001-A	6-39
	HOLD SHAFT (S)	136-789142-001-A	6-39
	TRACTOR KNOB	136-789162-001-A	6-39
	CLUTCH SPRING	136-789151-A	6-39
	BUSHING	136-789152-A	6-39
	PAPER NET (S)	136-789154-001-A	6-39

A B

Figure 6-2 Family Tree - P60/P6200 (8/13)

```
A     B
|     |-- FRAME STAY (SS)                          136-789139-001-A    6-39
|     |-- FRAME STAY (S)                           136-789139-002-A    6-39
|     |-- TRACTOR GUIDE (R)                        136-789150-001-A    6-39
|     |-- TRACTOR GUIDE (L)                        136-789150-002-A    6-39
|     |-- WASHER                                   136-789149-A        6-39
|     |-- E RING E-42                              803-010030-042-0    6-39
|     |-- E RING E-50                              803-010030-050-0    6-39
|     |-- SCREW, PL-CPIMSx4x6x15BF                 805-300004-006-0    6-39
|     |-- SCREW, COFIMSx3x6x15BF                   805-020003-006-0    6-39
|     L-- SCREW, SL-CPIMSx3x8x15BF                 805-310003-008-0    6-39
|
|
|-- TRACTOR COVER (S) ASSEMBLY                     136-846898-001-A    6-4
|
|-- 1 BIN SHEET FEEDER UNIT (S)                    136-218948-001-A    6-4
|     |
|     L-- MAIN UNIT S ASSEMBLY                     136-218956-001-A    6-41
|     |      |
|     |      |-- UNIT SUB (S) ASSEMBLY             135-788858-001-A    6-43
|     |      |      |
|     |      |      |-- MAIN FRAME (S) ASSEMBLY    136-788852-001-A    6-45
|     |      |      L-- FEED ROLLER (S)            136-788892-A        6-45
|     |      |      L-- PRESSURE ROLLER (S)        136-788894-A        6-45
|     |      |      |-- HOLD BUSHING               136-788818-A        6-45
|     |      |      L-- GUIDE BUSHING              136-788907-A        6-45
|     |      |      |-- BACK-UP PIECE              136-788899-001-A    6-45
|     |      |      |-- BACK-UP SPRING             136-788821-003-A    6-45
|     |      |      L-- SCREW, PL-CPIMSx3x5x15BF   805-300003-005-0    6-45
|     |      |
|     |      |-- MIDDLE GUIDE S ASSEMBLY           136-788871-001-A    6-43
|     |      |      |
|     |      |      |
|     |      |      |
A     B      C      D
```

Figure 6-2 Family Tree - P60/P6200 (9/13)

```
A   B   C   D
|   |   |   └-- MIDDLE GUIDE (S)                         136-788860-001-A    6-43
|   |   |   ├-- SIDE GUIDE                               136-788849-001-A    6-43
|   |   |   └-- SIDE GUIDE                               136-788849-002-A    6-43
|   |   |
|   |   ├-- EJECT GUIDE S ASSEMBLY                       136-788870-001-A    6-43
|   |   |   |
|   |   |   ├-- EJECT GUIDE (S) SUBASSEMBLY              136-789409-001-A    6-43
|   |   |   ├-- STACKER ROLLER S                         136-788903-A        6-43
|   |   |   ├-- BUSHING D                                136-788901-001-A    6-43
|   |   |   ├-- BUSHING D                                136-788901-002-A    6-43
|   |   |   ┌-- EJECT ROLLER GEAR                        136-788843-A        6-43
|   |   |   └-- E RING (E-37)                            803-010030-037-A    6-43
|   |   |
|   |   ├-- BOTTOM STACKER S ASSEMBLY                    136-788869-001-A    6-43
|   |   |   |
|   |   |   ├-- BOTTOM STACKER (S) SUBASSEMBLY           136-789410-001-A    6-43
|   |   |   ├-- FRONT STAY S                             136-788905-A        6-43
|   |   |   └-- SCREW, #2CBTSx3x6x3GF                    805-230103-006-0    6-43
|   |   |
|   |   ┌-- REAR STACKER (S) ASSEMBLY                    136-788822-001-A    6-43
|   |   |   |
|   |   |   ├-- REAR STACKER                             136-788823-001-A    6-43
|   |   |   ├-- E.S.D BRUSH                              136-788824-001-A    6-43
|   |   |   └-- SCREW, PL-CPIMSx3x5x15BF                 805-300003-005-0    6-43
|   |   |
|   |   ┌-- HOPPER UNIT ASSEMBLY                         136-788825-001-A    6-43
|   |   |   |
|   |   |   ├-- HOPPER BASE                              136-788791-001-A    6-43
|   |   |   ├-- HOPPER BASE                              136-788791-002-A    6-43
|   |   |   ┌-- HOPPER COVER                             136-788797-001-A    6-43
|   |   |   ┌-- HOPPER COVER                             136-788797-002-A    6-43
|   |   |   ┌-- SEPARATOR                                136-788792-001-A    6-43
|   |   |   |
A   B   C   D
```

Figure 6-2 Family Tree - P60/P6200 (10/13)

A B C D

- - SEPARATOR	136-788792-002-A	6-43
- - HOPPER PLATE ASSEMBLY	136-788794-001-A	6-43
- - HOPPER PLATE ASSEMBLY	136-788794-002-A	6-43
- - SEPARATOR SPRING	136-788793-001-A	6-43
- - PRESSURE SPRING	136-788861-002-A	6-43
- - SELECT ARM	136-788798-A	6-43
- - LOCK PIECE	136-787516-001-A	6-43
- - HOPPER RELEASE BAR	136-788817-001-A	6-43
- - HOLD SHAFT	136-788809-001-A	6-43
- - FEED ROLLER GEAR ASSEMBLY	136-788808-A	6-43
- - CLUTCH ASSEMBLY	136-788800-001-A	6-43
- - TOP GEAR ASSEMBLY	136-788801-001-A	6-43
- - MIDDLE DISK ASSEMBLY	136-788804-A	6-43
- - BASE GEAR 3	136-788889-A	6-43
- - PICK ROLLER SHAFT	136-788876-001-A	6-43
- - EJECT ROLLER 2 (S)	136-788872-001-A	6-43
- - CLUTCH HOLDER ASSEMBLY	136-789408-A	6-43
- - IDLE GEAR A	136-788837-A	6-43
- - IDLE GEAR B	136-788838-A	6-43
- - IDLE GEAR C	136-788880-A	6-43
- - IDLE GEAR D	136-788836-A	6-43
- - IDLE GEAR E	136-788910-A	6-43
- - IDLE GEAR G	136-788836-A	6-43
- - EJECT ROLLER GEAR	136-788843-A	6-43
- - PICK ROLLER GEAR	136-788841-A	6-43
- - RELEASE LEVER	136-788814-001-A	6-43
- - RELEASE LEVER	136-788814-002-A	6-43
- - PICK ROLLER	136-788811-001-A	6-43

A B C

Figure 6-2 Family Tree - P60/P6200 (11/13)

```
A     B     C
|     |     |
|     |     |-- PICK ROLLER                          136-788811-002-A    6-43
|     |     L-- SELECT LEVER                         136-788799-A        6-43
|     |     L-- EJECT SPRING                         136-788863-001-A    6-43
|     |     L-- HOLD BUSHING                         136-788818-A        6-43
|     |     L-- SIDE COVER                           136-788884-001-A    6-43
|     |     |-- SIDE COVER                           136-788885-001-A    6-43
|     |     |-- IDLE GEAR F                          136-788912-A        6-43
|     |     L-- NUT WASHER                           136-789407-A        6-43
|     |     L-- SCREW, PL-CPIMSx3x6x15BF             805-300003-006-0    6-43
|     |     |-- SCREW, SL-CPIMSx3x10x15BF            805-310003-010-0    6-43
|     |     |-- SCREW, PL-CPIMSx3x8x15BF             805-300003-008-0    6-43
|     |     L-- E RING (E-32)                        803-010030-032-0    6-43
|     |     L-- E RING (E-40)                        803-010030-040-0    6-43
|     |
|     |-- UPPER STACKER                              136-788815-001-A    6-41
|     |
|     |-- STACKER GUIDE ASSEMBLY                     136-788828-001-A    6-41
|     |     |
|     |     |-- STACKER GUIDE                        136-788834-001-A    6-41
|     |     L-- PAPER GUIDE                          136-788835-A        6-41
|     |
|     |-- CENTER GUIDE                               136-788807-001-A    6-41
|     L-- HOPPER GUIDE BAR                           136-788866-A        6-41
|
L-- CANOPY (S)                                       136-846890-001-A    6-4
```

Figure 6-2 Family Tree - P60/P6200 (12/13)

NOTE: Dotted lines denote option.

*1	GRP 200, 208:	P6200, 115 V	(Japan Production)
	GRP 204, 206:	P6200, 230 V	(Japan Production)
	GRP 203:	P60, 230 V	(Japan Production)
	GRP 301 - 306:	P60, 230 V	(U.K. Production)
	GRP 408:	P6200, 115 V	(U.S.A. Production)
	GRP 409:	P6260, 115 V	(U.S.A. Production)
*2	GRP 200, 202:	P6200, 115 V	(Japan Production)
	GRP 203:	P60/P6200, 230 V	(Japan Production)
	GRP 303:	P60, 230 V	(U.K. Production)
	GRP 402:	P6200, 115 V	(U.S.A. Production)
	GRP 403:	P6260, 115 V	(U.S.A. Production)
*3	GRP 001:	Model P6200/P60	(Japan Production)
	GRP 301:	Model P60	(U.K. Production)
	GRP 401:	Model P6200/P6260	(U.S.A. Production)
*4	GRP 002:	PSD Power (B)	(Japan Production)
	GRP 003:	PSD Power (C)	(Japan Production)
	GRP 303:	PSD Power (C)	(U.K. Production)
*5	136-436268-001-A:	G8ESPA PCB Assembly	(Japan Production)
	135-436268-002-A:	G8ESPB PCB Assembly	(Japan Production)
	136-436269-001-A:	G8ESQA PCB Assembly	(U.S.A. Production)
	136-436270-001-A:	G8ESRA PCB Assembly	(U.K. Production)
*6	136-436272-001-A:	G8ESTA PCB Assembly	(Japan/U.S.A. Production)
	136-436274-001-A:	G8ESVA PCB Assembly	(U.K. Production)
*7	GRP 001:	115 V model	
	GRP 002:	230 V model	
*8	GRP 201:	P60	(Japan Production)
	GRP 202:	P6200	(Japan Production)
	GRP 301:	P60	(U.K. Production)
	GRP 401:	P6200/P6260	(U.S.A. Production)
*9	808-846004-010-A:	P6200, 115 V	(Japan Production)
		P6200/P6260, 115 V	(U.S.A. Production)
	808-840491-001-A:	P60/P6200, 230 V	(Japan Production)
	808-840491-003-A:	P6200, 230 V, Australia model	(Japan Production)
	808-846856-001-A:	P60, 230 V	(U.K. Production)
	808-846856-002-A:	P60, 230 V, Non-plug type	(U.K. Production)
*10	GRP 001:	P60	
	GRP401:	P6200	

Figure 6-2 Family Tree - P60/P6200 (13/13)

PART NAME	PART NUMBER	FIG.NO.
PINWRITER P70/P6300	136-218451-GRP-0*1	6-5
PRINTER UNIT(W)	136-218454-GRP-A*2	6-5
MECHANISM UNIT (W)	136-218455-501-A	6-7
FRAME UNIT (W)	136-218456-501-A	6-9
FRAME ASSY (W)	136-218457-501-A	6-11
RIGHT SIDE FRAME SUBASSEMBLY	136-846265-001-A	6-13
LEFT SIDE FRAME SUBASSEMBLY	136-846265-002-A	6-13
MAIN STAY ASSY (W)	136-218466-501-A	6-13
MAIN STAY (W)	136-846337-501-A	6-15
REAR PAPER END LEVER	136-846344-001-A	6-15
BOTTOM MDL LEVER	136-846345-001-A	6-15
ROLLER SUPPORT	136-846339-001-A	6-15
ROLLER SUPPORT SPRING	136-846306-001-A	6-15
ROLLER SUPPORT BRACKET	136-846338-001-A	6-15
RELEASE SHAFT (W)	136-846340-501-A	6-15
PRESSURE ROLLER (W)	136-846341-501-A	6-15
PRESSURE ROLLER (F)	136-846342-001-A	6-15
PRESSURE SPRING (W)	136-846406-501-A	6-15
BOTTOM GUIDE ASSEMBLY (W)	136-846277-501-A	6-15
SCREW, STCS-CPIMSx4x6x15BF	808-802445-406-A	6-15
FRONT STAY (W)	136-846297-501-A	6-13
PAPER GUIDE (W)	136-846286-501-A	6-13
WIRE SADDLE WS-1NS	808-811031-001-A	6-13
SCREW, STCS-CPIMSx4x6x15BF	808-802445-406-A	6-13

A B C D

Figure 6-3 Family Tree - P70/P6300 (1/16)

A B C D

PAPER RELEASE ARM		136-846287-001-A	6-11
LF MOTOR UNIT		136-218460-001-A	6-11
	LF MOTOR FRAME SUBASSEMBLY	136-846276-001-A	6-11
	SLIDE GEAR	136-846311-001-A	6-11
	SLIDE GEAR SPRING	136-846312-001-A	6-11
	LF GEAR	136-846310-001-A	6-11
	LF MOTOR ASSEMBLY	808-869546-001-A	6-11
	LF PLATE	136-854346-001-A	6-11
	SCREW, PL-CPIMSx3x8x15BF	805-300003-008-0	6-11
SP MOTOR UNIT		136-218459-001-A	6-11
	SP MOTOR BRACKET	136-846308-001-A	6-11
	SP MOTOR ASSEMBLY	808-869545-001-A	6-11
	FG PLATE (SP)	136-846309-001-A	6-11
	SCREW, STCS-CPIMSx4x10x15BF	808-802445-410-A	6-11
PLATEN ASSY (W)		136-218461-501-A	6-11
	PLATEN (W)	136-846313-501-A	6-17
	PLATEN BUSHING (LH)	136-846314-001-A	6-17
	PLATEN BUSHING (RH)	136-846314-002-A	6-17
	PLATEN THRUST SHIM	136-768495-0	6-17
	OPTION DRIVE GEAR	136-846315-001-A	6-17
	PAPER SELECTION LEVER	136-846316-001-A	6-17
	PLATEN GEAR	136-846317-001-A	6-17
	MANUAL FEED GEAR	136-846318-001-A	6-17
	SPRING PIN	803-010022-314-0	6-17
OPTION GEAR		136-846288-001-A	6-11
H.P SENSOR ASSEMBLY		808-820754-001-A	6-11
SENSOR & SW ASSEMBLY		808-820753-001-A	6-11

A B C D

Figure 6-3 Family Tree - P70/P6300 (2/16)

A B C D

CARRIER UNIT (W)	136-218462-501-A	6-11
CARRIER ASSEMBLY (W)	136-846266-501-A	6-11
CARRIER SUBASSEMBLY (W)	136-846278-501-A	6-18
CARRIER FRAME SUBASSEMBLY	136-846267-001-A	6-18
SLIDE SET PIECE	136-824597-001-B	6-18
CLAMP LEVER (LH)	136-846386-001-A	6-18
CLAMP LEVER (RH)	136-846386-002-A	6-18
PLANETARIUM GEAR	136-846358-001-A	6-18
PLANETARIUM ARM	136-846357-001-A	6-18
FRICTION SPRING	136-854349-001-A	6-18
RIBBON FEED PULLEY	136-846354-001-A	6-18
RIBBON FEED WIRE (W) ASSEMBLY	808-812396-501-A	6-18
PULLEY CASE	136-846385-001-A	6-18
COUNTER GEAR	136-846359-001-A	6-18
RIBBON DRIVE GEAR	136-846360-001-A	6-18
TIMING BELT (W)	808-812393-501-A	6-18
BELT HOLDER	136-846361-001-A	6-18
RIBBON SENSOR ASSEMBLY	808-820752-001-A	6-18
PHOTO SENSOR CLAMP PLATE	136-824599-001-A	6-18
CARRIER FRAME COVER	136-846362-001-A	6-18
CARRIER FG SPRING (LH)	136-846367-001-A	6-18
CARRIER FG SPRING (RH)	136-846367-002-A	6-18
PIECE (1)	136-846363-001-A	6-18
SCREW, PL-CPIMSx3x8x15BF	805-300003-008-0	6-18
CARRIER CABLE (N) ASSEMBLY	808-812392-001-A	6-11
GUIDE SHAFT (W)	136-846284-501-A	6-11

A B C D

Figure 6-3 Family Tree - P70/P6300 (3/16)

A B C D

ECCENTRIC BUSHING	136-846383-001-A	6-11
GAP ADJUST LEVER	136-846285-001-A	6-11
LEVER SHEET	136-846438-002-A	6-11
TENSION ARM ASSEMBLY	136-846302-001-A	6-11
DRIVEN PULLEY ASSEMBLY	136-846371-001-A	6-11
DRIVEN BUSHING (ROLLER BEARING)	808-868150-001-A	6-11
DRIVEN PULLEY SHAFT	136-846380-001-A	6-11
TENSION ARM	136-846370-001-A	6-11
DRIVEN PULLEY COLLAR	136-854413-001-A	6-11
BELT TENSION SPRING	136-846373-001-A	6-11
WIRE TENSION SPRING	136-846356-001-A	6-11
SCREW, STCS-CPIMSx4x6x15BF	808-802445-406-A	6-11
SCREW, PL-CPIMSx4x10x15BF	808-300004-010-A	6-11
SCREW, STSL-CPIMSx3x8x15BF	808-802446-308-A	6-11
VINYL TWIST-TIE	808-835074-005-A	6-11
RIBBON BASE (BLACK) ASSEMBLY	136-218465-001-A	6-9
COLOR RIBBON BASE UNIT	136-218468-001-A	6-9
TRACTOR UNIT (W)	136-218463-501-A	6-9
TRACTOR FRAME (W)	136-846319-501-A	6-20
TRACTOR DRIVE SHAFT (W)	136-846320-501-A	6-20
TRACTOR SUPPORT SHAFT(W)	136-846321-501-A	6-20
TRACTOR BUSHING (LH)	136-846322-002-A	6-20
TRACTOR BUSHING(RH)	136-846322-001-A	6-20
TRACTOR ASSEMBLY (L)	808-868140-012-A	6-20
TRACTOR ASSEMBLY (R)	808-868140-011-A	6-20

A B C D

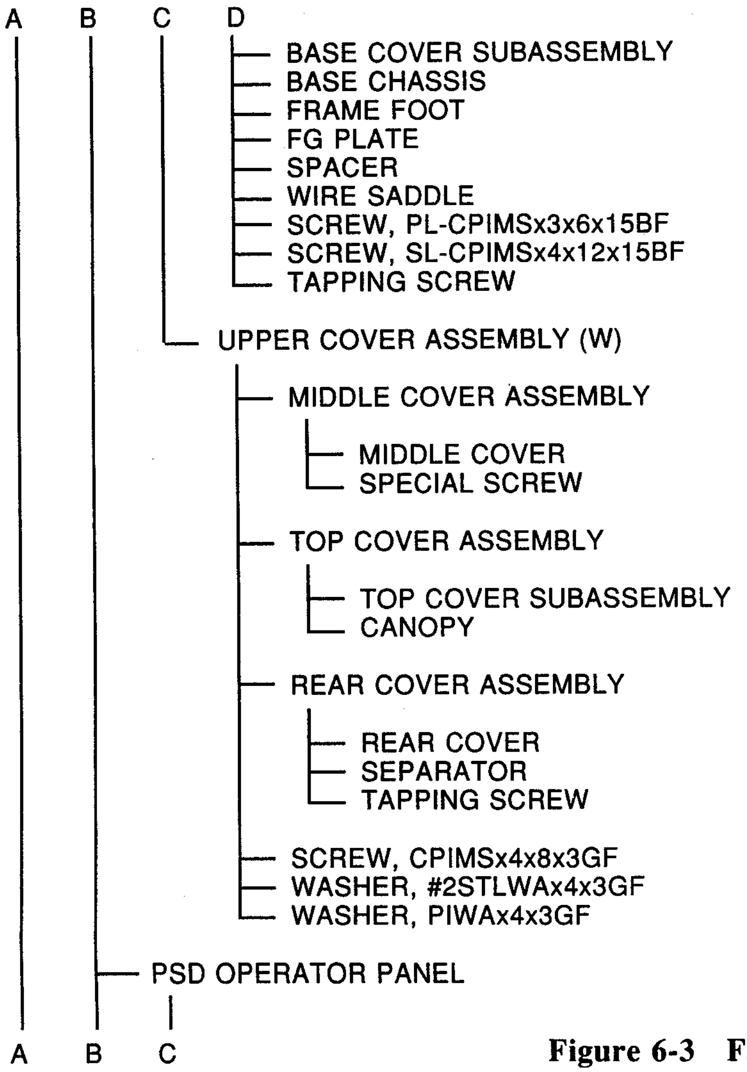
Figure 6-3 Family Tree - P70/P6300 (4/16)

A B C D

            - CENTER GUIDE — 136-824533-001-A — 6-20
            - TRACTOR GEAR — 136-846323-001-A — 6-20
            - SPECIAL RETAINER — 136-854347-001-A — 6-20
        - FEED ROLLER UNIT (W) — 136-218464-501-A — 6-9
            - FEED ROLLER FRAME ASSEMBLY (W) — 136-846273-501-A — 6-22
                - FEED ROLLER FRAME (W) — 136-846331-501-A — 6-22
                - FRICTION MDL LEVER (W) — 136-846332-501-A — 6-22
                - MDL LEVER BUSHING — 136-846305-001-A — 6-22
            - FEED ROLLER (W) — 136-846326-501-A — 6-22
            - FEED ROLLER SHAFT BUSHING — 136-846328-001-A — 6-22
            - FEED ROLLER GEAR — 136-846329-001-A — 6-22
            - FEED ROLLER COVER (W) — 136-846330-501-A — 6-22
            - BAIL ROLLER GUIDE ASSEMBLY (W) — 136-218458-501-A — 6-22
                - BAIL ROLLER GUIDE (W) — 136-846298-501-A — 6-22
                - SUPPORT SHAFT (W) — 136-846368-501-A — 6-22
                - FEED ASSIST ROLLER — 136-846369-001-A — 6-22
            - SPECIAL SCREW — 136-846304-001-A — 6-22
        - SCREW, STCS-CPIMSx4x6x15BF — 808-802445-406-A — 6-9
    - MSC-24 P/H ASSEMBLY — 136-218474-002-A — 6-7
    - HOUSING UNIT — 136-215357-GRP-A*3 — 6-7
        - BASE COVER ASSEMBLY (W) — 136-215363-GRP-A*3 — 6-7

A B C D

Figure 6-3 Family Tree - P70/P6300 (5/16)



BASE COVER SUBASSEMBLY	136-217749-GRP-A^{*3}	6-24
BASE CHASSIS	136-843455-501-A	6-24
FRAME FOOT	136-835336-001-A	6-24
FG PLATE	136-843459-001-A	6-24
SPACER	136-846883-001-A	6-24
WIRE SADDLE	808-811031-001-A	6-24
SCREW, PL-CPIMSx3x6x15BF	805-300003-006-0	6-24
SCREW, SL-CPIMSx4x12x15BF	805-310004-012-0	6-24
TAPPING SCREW	808-802044-408-0	6-24
UPPER COVER ASSEMBLY (W)	136-215358-GRP-A^{*3}	6-7
MIDDLE COVER ASSEMBLY	136-215359-GRP-A^{*3}	6-26
MIDDLE COVER	136-846409-GRP-A^{*3}	6-26
SPECIAL SCREW	808-814333-A	6-26
TOP COVER ASSEMBLY	136-215360-GRP-A^{*3}	6-26
TOP COVER SUBASSEMBLY	136-217747-GRP-A^{*3}	6-26
CANOPY	136-846413-GRP-A^{*3}	6-26
REAR COVER ASSEMBLY	136-218953-GRP-A^{*3}	6-26
REAR COVER	136-846415-GRP-A^{*3}	6-26
SEPARATOR	136-846881-GRP-A^{*3}	6-26
TAPPING SCREW	808-802044-408-0	6-26
SCREW, CPIMSx4x8x3GF	805-000104-008-0	6-7
WASHER, #2STLWAx4x3GF	808-866295-102-A	6-7
WASHER, PIWAx4x3GF	805-610104-0	6-7
PSD OPERATOR PANEL	808-818170-301-A	6-7

Figure 6-3 Family Tree - P70/P6300 (6/16)

A	B	C		
		OPERATOR PANEL	136-846432-301-A	6-27
		OPERATOR PANEL SHEET	136-846425-301-A	6-27
		OPERATOR PANEL PCB ASSEMBLY	808-818170-602-A	6-27
		CORE ASSEMBLY	136-789708-001-A	6-27
		SCREW, #2CPTSx2.6x6x15BF	805-060026-006-0	6-27
	CARD HOLDER ASSEMBLY		136-846275-GRP-A*[10]	6-18
		CARD HOLDER SUBASSEMBLY	136-854348-GRP-A*[10]	6-18
		CARD HOLDER BRACKET	136-846364-GRP-A*[10]	6-18
	POWER BOARD		808-891104-GRP-A*[4]	6-7
	MOTHER BOARD		136-XXXXXX-XXX-A*[5]	6-7
	CONNECTION BOARD		136-XXXXXX-001-A*[6]	6-7
	DC CABLE		808-857768-201-A	6-7
	PLATEN KNOB		136-846283-001-A	6-7
	FONT HOLDER		136-843451-GRP-A*[3]	6-7
	SHIELD COVER ASSEMBLY		136-217753-001-A	6-7
	CABLE COVER		136-843463-GRP-A*[3]	6-7
	CARRIER CABLE COVER		136-843457-GRP-A*[3]	6-7
	POWER SWITCH CABLE		808-857767-GRP-A*[7]	6-7
	SHIELD PLATE		136-846894-501-A	6-7
	FG SPRING		136-846906-001-A	6-7
	SCREW, PL-CPIMSx5x8x15BF		805-300005-008-0	6-7
	SCREW, BCBTSx4x10x15BF		808-802044-410-0	6-7
	SCREW, PL-CPIMSx3x8x15BF		805-300003-008-0	6-7
	SCREW, PL-CPIMSx4x8x15BF		805-300004-008-0	6-7
	SPECIAL SCREW		136-852788-001-A	6-7
	SCREW, PL-CPIMSX3X10X15BF		805-300003-010-0	6-7
LOGO LABEL			136-707134-GRP-A*[8]	6-5
CONTROL NAME PLATE			136-707137-GRP-A*[8]	6-5
SHEET GUIDE			136-846416-GRP-A*[3]	6-5
POWER CODE SET			808-XXXXXX-XXX-A*[9]	6-5
BLACK NYLON RIBBON			808-867928-301-A	6-5
A				

Figure 6-3 Family Tree - P70/P6300 (7/16)

A

BLACK MULTISTRIKE FILM RIBBON	808-869921-301-A	6-5
COLOR NYLON RIBBON	808-867928-311-A	6-5
REFERENCE SHEET	136-843464-001-A	6-4
PAPER SET PIECE (L)	136-846418-GRP-A*[3]	6-5
PAPER SET PIECE (R)	136-846419-GRP-A*[3]	6-5
SILENT CANOPY ASSEMBLY	136-217750-GRP-A*[3]	6-5
RS-232C KIT	136-217741-001-A	6-5
SERIAL I/F CASE (U)	136-846899-001-A	6-37
SERIAL I/F CASE (L)	136-846900-001-A	6-37
SET SCREW	136-846884-001-A	6-37
G8ESW PCB ASSEMBLY	136-436275-A	6-37
SCREW, PCBTSx3x8x3GF	808-802172-308-0	6-37
SCREW, PCBTSx3x12x3GF	808-802172-312-0	6-37
TRACTOR UNIT (L)	136-218470-501-A	6-5
SIDE FRAME (R) SUBASSEMBLY	136-789127-001-A	6-40
SIDE FRAME (L) SUBASSEMBLY	136-789127-002-A	6-40
LOCK SPRING	136-789132-A	6-40
IDLE GEAR 1	136-789143-A	6-40
IDLE GEAR 2	136-789144-A	6-40
CENTER GUIDE	136-789138-A	6-40
TRACTOR GEAR	136-789140-A	6-40
DRIVE SHAFT (L)	136-789141-501-A	6-40
HOLD SHAFT (L)	136-789142-501-A	6-40
TRACTOR KNOB	136-789162-001-A	6-40
CLUTCH SPRING	136-789151-A	6-40
BUSHING	136-789152-A	6-40
PAPER NET (L)	136-789154-501-A	6-40
RUBBER CAP	136-811830-A	6-40
SIDE COVER (R)	136-789155-001-A	6-40
SIDE COVER (L)	136-789155-002-A	6-40
TRACTOR (R) ASSEMBLY	136-802351-001-A	6-40

A B

Figure 6-3 Family Tree - P70/P6300 (8/16)

```
A     B
|     |-- TRACTOR (L) ASSEMBLY                          136-802351-002-A    6-40
|     |-- FRAME STAY (LS)                               136-789139-501-A    6-40
|     |-- FRAME STAY (L)                                136-789139-502-A    6-40
|     |-- TRACTOR GUIDE (R)                             808-789150-001-A    6-40
|     |-- TRACTOR GUIDE (L)                             808-789150-002-A    6-40
|     |-- WASHER                                        136-789149-A        6-40
|     |-- E RING E-42                                   803-010030-042-0    6-40
|     |-- E RING E-50                                   803-010030-050-0    6-40
|     |-- SCREW, PL-CPIMSx4x6x15BF                      805-300004-006-0    6-40
|     |-- SCREW, COFIMS3x6x15BF                         805-020003-006-0    6-40
|     |-- SCREW, SL-CPIMSx3x8x15BF                      805-310003-008-0    6-40
|
|-- TRACTOR COVER (L) ASSEMBLY                          136-846898-501-A    6-5
|
|-- 1 BIN SHEET FEEDER UNIT (L)                         136-218948-501-A    6-5
|     |
|     |--MAIN UNIT (L) ASSEMBLY                         136-218956-501-A    6-42
|     |      |
|     |      |-- UNIT SUB (L) ASSEMBLY                  136-788858-501-A    6-44
|     |      |      |
|     |      |      |-- MAIN FRAME (L) ASSEMBLY         136-788852-501-A    6-46
|     |      |      |-- FEED ROLLER (L)                 136-788893-A        6-46
|     |      |      |-- PRESSURE ROLLER (L)             136-788895-A        6-46
|     |      |      |-- HOLD BUSHING                    136-788818-A        6-46
|     |      |      |-- GUIDE BUSHING                   136-788907-A        6-46
|     |      |      |-- BACK-UP PIECE                   136-788899-001-A    6-46
|     |      |      |-- BACK-UP SPRING                  136-788821-003-A    6-46
|     |      |      |-- SCREW, PL-CPIMSx3x5x15BF        805-300003-005-0    6-46
|     |      |
|     |      |-- MIDDLE GUIDE L ASSEMBLY                136-788871-501-A    6-44
|     |      |      |
|     |      |      |-- MIDDLE GUIDE L                  136-788859-501-A    6-44
|     |      |      |-- SIDE GUIDE                      136-788849-001-A    6-44
|     |      |      |-- SIDE GUIDE                      136-788849-002-A    6-44
A     B      C
```

Figure 6-3 Family Tree - P70/P6300 (9/16)

A B C

EJECT GUIDE (L) ASSEMBLY	136-788870-501-A	6-44
EJECT GUIDE (L) SUBASSEMBLY	136-789409-501-A	6-44
STACKER ROLLER (L)	136-788902-A	6-44
BUSHING D	136-788901-001-A	6-44
BUSHING D	136-788901-002-A	6-44
EJECT ROLLER GEAR	136-788843-A	6-44
E RING (E-37)	803-010030-037-A	6-44
BOTTOM STACKER L ASSEMBLY	136-788869-501-A	6-44
BOTTOM STACKER (L) SUBASSEMBLY	136-789410-501-A	6-44
FRONT STAY L	136-788904-A	6-44
SCREW, #2CBTSx3x6x3GF	805-230103-006-0	6-44
REAR STACKER (L) ASSEMBLY	136-788822-501-A	6-44
REAR STACKER L	136-788823-501-A	6-44
E.S.D BRUSH L	136-788824-501-A	6-44
SCREW, PL-CPIMSx3x5x15BF	805-300003-005-0	6-44
HOPPER UNIT ASSEMBLY	136-788825-501-A	6-44
HOPPER BASE	136-788791-001-A	6-44
HOPPER BASE	136-788791-002-A	6-44
HOPPER COVER	136-788797-001-A	6-44
HOPPER COVER	136-788797-002-A	6-44
SEPARATOR	136-788792-001-A	6-44
SEPARATOR	136-788792-002-A	6-44
HOPPER PLATE ASSEMBLY	136-788794-001-A	6-44
HOPPER PLATE ASSEMBLY	136-788794-002-A	6-44
SEPARATOR SPRING	136-788793-001-A	6-44

A B C D

Figure 6-3 Family Tree - P70/P6300 (10/16)

```
A   B   C   D
|   |   |   |
|   |   |   |-- PRESSURE SPRING                136-788861-002-A   6-44
|   |   |   |-- SELECT ARM                     136-788798-A       6-44
|   |   |   |-- LOCK PIECE                     136-787516-001-A   6-44
|   |   |   |-- HOPPER RELEASE BAR             136-788817-501-A   6-44
|   |   |   L-- HOLD SHAFT                     136-788809-501-A   6-44
|   |   |
|   |   L--FEED ROLLER GEAR ASSEMBLY           136-788808-A       6-44
|   |   |
|   |   |--CLUTCH ASSEMBLY                     136-788800-001-A   6-44
|   |   |   |
|   |   |   |-- TOP GEAR ASSEMBLY              136-788801-001-A   6-44
|   |   |   |-- MIDDLE DISK ASSEMBLY           136-788804-A       6-44
|   |   |   L-- BASE GEAR 3                    136-788889-A       6-44
|   |   |
|   |   |--PICK ROLLER SHAFT                   136-788876-501-A   6-44
|   |   |--EJECT ROLLER 2 (L)                  136-788872-501-A   6-44
|   |   |--CLUTCH HOLDER ASSEMBLY              136-789408-A       6-44
|   |   |--IDLE GEAR A                         136-788837-A       6-44
|   |   |--IDLE GEAR B                         136-788838-A       6-44
|   |   |--IDLE GEAR C                         136-788880-A       6-44
|   |   |--IDLE GEAR D                         136-788836-A       6-44
|   |   |--IDLE GEAR E                         136-788910-A       6-44
|   |   |--IDLE GEAR G                         136-788911-A       6-44
|   |   |--EJECT ROLLER GEAR                   136-788843-A       6-44
|   |   |--PICK ROLLER GEAR                    136-788841-A       6-44
|   |   |--RELEASE LEVER                       136-788814-001-A   6-44
|   |   |--RELEASE LEVER                       136-788814-002-A   6-44
|   |   |--PICK ROLLER                         136-788811-001-A   6-44
|   |   |--PICK ROLLER                         136-788811-002-A   6-44
|   |   |--SELECT LEVER                        136-788799-A       6-44
|   |   |--EJECT SPRING                        136-788863-001-A   6-44
|   |   |--HOLD BUSHING                        136-788818-A       6-44
|   |   |--SIDE COVER                          136-788884-001-A   6-44
|   |   |--SIDE COVER                          136-788885-001-A   6-44
|   |   |
A   B   C
```

Figure 6-3   Family Tree - P70/P6300 (11/16)

```
A     B     C
|     |     |
|     |     |-- IDLE GEAR F                                     136-788912-A          6-44
|     |     |-- NUT WASHER                                      136-789407-A          6-44
|     |     |-- SCREW, PL-CPIMSx3x6x15BF                        805-300003-006-0      6-44
|     |     |-- SCREW, SL-CPIMSx3x10x15BF                       805-310003-010-0      6-44
|     |     |-- SCREW, PL-CPIMSx3x8x15BF                        805-300003-008-0      6-44
|     |     L-- E RING (E-32)                                   803-010030-032-0      6-44
|     |     L-- E RING (E-40)                                   803-010030-040-0      6-44
|     |
|     L-- UPPER STACKER                                         136-788815-001-A      6-42
|     |
|     |-- STACKER GUIDE ASSEMBLY                                136-788828-001-A      6-42
|     |     |
|     |     |-- STACKER GUIDE                                   136-788834-001-A      6-42
|     |     L-- PAPER GUIDE                                     136-788835-A          6-42
|     |
|     L-- CENTER GUIDE                                          136-788807-001-A      6-42
|     L-- HOPPER GUIDE BAR                                      136-788866-A          6-42
|
|-- CANOPY (L)                                                  136-846891-501-A      6-5
|
L-- 2 BIN SHEET FEEDER UNIT (L)                                 136-218949-501-A      6-5
      |
      |-- 2 BIN MAIN UNIT ASSEMBLY                              136-218957-501-A      6-47
      |     |
      |     L-- 2 BIN UNIT SUBASSEMBLY                          136-788855-501-A      6-48
      |     |     |
      |     |     |-- SECOND MAIN FRAME ASSEMBLY                136-788810-001-A      6-49
      |     |     |-- FEED ROLLER                               136-788893-A          6-49
      |     |     |-- PRESSURE ROLLER (L)                       136-788895-A          6-49
      |     |     |-- HOLD BUSHING                              136-788818-A          6-49
      |     |     |-- GUIDE BUSHING                             136-788907-A          6-49
      |     |     |-- BACK-UP PIECE                             136-788899-001-A      6-49
      |     |     L-- BACK-UP SPRING                            136-788821-002-A      6-49
      |     |     |
      A     B     C
```

Figure 6-3 Family Tree - P70/P6300 (12/16)

A	B	C			
		└	SCREW, PL-CPIMSx3x5x15BF	805-300003-005-0	6-49
	└		MIDDLE GUIDE L ASSEMBLY	136-788871-501-A	6-48
		├	MIDDLE GUIDE (L)	136-788859-501-A	6-48
		├	SIDE GUIDE	136-788849-001-A	6-48
		└	SIDE GUIDE	136-788849-002-A	6-48
	├		EJECT GUIDE L ASSEMBLY	136-788870-501-A	6-48
		├	EJECT GUIDE (L) SUBASSEMBLY	136-789409-501-A	6-48
		├	STACKER ROLLER (L)	136-788902-A	6-48
		├	BUSHING D	136-788901-001-A	6-48
		├	BUSHING D	136-788901-002-A	6-48
		├	EJECT ROLLER GEAR	136-788843-A	6-48
		└	E RING (E-37)	803-010030-037-A	6-48
	├		BOTTOM STACKER (L) ASSEMBLY	136-788869-501-A	6-48
		├	BOTTOM STACKER (L) SUBASSEMBLY	136-789410-501-A	6-48
		├	FRONT STAY (L)	136-788904-A	6-48
		├	EJECT ROLLER	136-788873-001-A	6-48
		├	EJECT PIN	136-788850-A	6-48
		└	SCREW, #2CBTSx3x6x3GF	805-230103-006-0	6-48
	├		REAR STACKER (L) ASSEMBLY	136-788822-501-A	6-48
		├	REAR STACKER	136-788823-501-A	6-48
		├	E.S.D BRUSH (L)	136-788824-501-A	6-48
		└	SCREW, PL-CPIMSx3x5x15BF	805-300003-005-0	6-48
A	B				

Figure 6-3 Family Tree - P70/P6300 (13/16)

HOPPER UNIT ASSEMBLY	136-788825-501-A	6-48
HOPPER BASE	136-788791-001-A	6-48
HOPPER BASE	136-788791-002-A	6-48
HOPPER COVER	136-788797-001-A	6-48
HOPPER COVER	136-788797-002-A	6-48
SEPARATOR	136-788792-001-A	6-48
SEPARATOR	136-788792-002-A	6-48
HOPPER PLATE ASSEMBLY	136-788794-001-A	6-48
HOPPER PLATE ASSEMBLY	136-788794-002-A	6-48
SEPARATOR SPRING	136-788793-001-A	6-48
PRESSURE SPRING	136-788861-002-A	6-48
SELECT ARM	136-788798-A	6-48
LOCK PIECE	136-787516-002-A	6-48
HOPPER RELEASE BAR	136-788817-501-A	6-48
HOLD SHAFT	136-788809-501-A	6-48
HOPPER UNIT 2 ASSEMBLY	136-788826-501-A	6-48
HOPPER BASE	136-788791-001-A	6-48
HOPPER BASE	136-788791-002-A	6-48
HOPPER COVER	136-788797-001-A	6-48
HOPPER COVER	136-788797-002-A	6-48
SEPARATOR	136-788792-001-A	6-48
SEPARATOR	136-788792-002-A	6-48
HOPPER PLATE ASSEMBLY	136-788794-001-A	6-48
HOPPER PLATE ASSEMBLY	136-788794-002-A	6-48
SEPARATOR SPRING	136-788793-001-A	6-48
PRESSURE SPRING	136-788861-002-A	6-48
LOCK PIECE	136-787516-001-A	6-48
HOPPER RELEASE BAR	136-788817-501-A	6-48
HOLD SHAFT 2	136-788816-501-A	6-48

Figure 6-3 Family Tree - P70/P6300 (14/16)

```
A    B
|    |-- FEED ROLLER GEAR ASSEMBLY                136-788808-A          6-48
|    |
|    |-- CLUTCH ASSEMBLY                          136-788800-001-A      6-48
|    |       |
|    |       |-- TOP GEAR ASSEMBLY                136-788801-001-A      6-48
|    |       |-- MIDDLE DISK ASSEMBLY             136-788804-A          6-48
|    |       L-- BASE GEAR 3                      136-788889-A          6-48
|    |
|    |-- CLUTCH ASSEMBLY                          136-788800-002-A      6-48
|    |       |
|    |       L-- TOP GEAR ASSEMBLY                136-788801-002-A      6-48
|    |       L-- MIDDLE DISK ASSEMBLY             136-788804-A          6-48
|    |       L-- BASE GEAR 3                      136-788889-A          6-48
|    |
|    |-- PICK ROLLER SHAFT (L)                    136-788876-501-A      6-48
|    |-- EJECT ROLLER 2 (L)                       136-788872-501-A      6-48
|    |-- CLUTCH HOLDER ASSEMBLY                   136-789408-A          6-48
|    |-- IDLE GEAR A                              136-788837-A          6-48
|    |-- IDLE GEAR B                              136-788838-A          6-48
|    |-- IDLE GEAR C                              136-788880-A          6-48
|    |-- IDLE GEAR D                              136-788836-A          6-48
|    |-- IDLE GEAR E                              136-788910-A          6-48
|    |-- IDLE GEAR G                              136-788911-A          6-48
|    |-- IDLE GEAR F                              136-788912-A          6-48
|    |-- GEAR PULLEY D                            136-788848-A          6-48
|    |-- EJECT ROLLER GEAR                        136-788843-A          6-48
|    L-- PICK ROLLER GEAR                         136-788841-A          6-48
|    |-- RELEASE LEVER R                          136-788814-001-A      6-48
|    L-- RELEASE LEVER L                          136-788814-002-A      6-48
|    L-- PICK ROLLER                              136-788811-001-A      6-48
|    L-- PICK ROLLER                              136-788811-002-A      6-48
|    L-- SELECT LEVER                             136-788799-A          6-48
|    |
A    B
```

Figure 6-3 Family Tree - P70/P6300 (15/16)

A	B			
		EJECT SPRING	136-788893-001-A	6-48
		HOLD BUSHING	136-788818-A	6-48
		SIDE COVER L	136-788886-001-A	6-48
		SIDE COVER R	136-788887-001-A	6-48
		IDLE GEAR H	136-788913-A	6-48
		NUT WASHER	136-789407-A	6-48
		PULLEY SPACER	136-788919-A	6-48
		MICRO-PITCH TIMING BELT	808-805049-016-A	6-48
		SCREW, PL-CPIMSx3x6x15BF	805-300003-006-0	6-48
		SCREW, SL-CPIMSx3x10x15BF	805-310003-010-0	6-48
		SCREW, PL-CPIMSx3x8x15BF	805-300003-008-0	6-48
		SCREW, PL-CPIMSx4x8x15BF	805-300004-008-0	6-48
		E RING (E-32)	803-010030-032-0	6-48
		E RING (E-40)	803-010030-040-0	6-48
	UPPER STACKER		136-788815-001-A	6-47
	STACKER GUIDE ASSEMBLY		136-788828-001-A	6-47
		STACKER GUIDE	136-788834-001-A	6-47
		PAPER GUIDE	136-788835-A	6-47
	CENTER GUIDE		136-788807-001-A	6-47
	HOPPER GUIDE BAR		136-788866-A	6-47

NOTE: Dotted lines denote option.

*1	GRP 700, 708:	P6300, 115 V	(Japan Production)
	GRP 704, 706:	P6300, 230 V	(Japan Production)
	GRP 703:	P70, 230 V	(Japan Production)
	GRP 801 - 806:	P70, 230 V	(U.K. Production)
	GRP 908:	P6300, 115 V	(U.S.A. Production)
	GRP 909:	P6360, 115 V	(U.S.A. Production)
*2	GRP 700, 702:	P6300	(Japan Production)
	GRP 703:	P70, 230 V	(Japan Production)
	GRP 803:	P70, 230 V	(U.K. Production)
	GRP 902:	P6300, 115 V	(U.S.A. Production)
	GRP 903:	P6360, 115 V	(U.S.A. Production)
*3	GRP 501:	P6300/P70	(Japan Production)
	GRP 801:	P70	(U.K. Production)
	GRP 901:	P6300/P6360	(U.S.A. Production)
*4	GRP 002:	PSD Power (B)	(Japan Production)
	GRP 003:	PSD Power (C)	(Japan Production)
	GRP 303:	PSD Power (C)	(U.K. Production)
*5	136-436268-001-A:	G8ESPA PCB Assembly	(Japan Production)
	136-436268-002-A:	G8ESPB PCB Assembly	(Japan Production)
	136-436269-001-A:	G8ESQA PCB Assembly	(U.S.A. Production)
	136-436270-001-A:	G8ESRA PCB Assembly	(U.K. Production)
*6	136-436272-001-A:	G8ESTA PCB Assembly	(Japan/U.S.A. Production)
	136-436274-001-A:	G8ESVA PCB Assembly	(U.K. Production)
*7	GRP 001:	115 V Model	
	GRP 002:	230 V Model	
*8	GRP 701:	P70	(Japan Production)
	GRP 702:	P6300	(Japan Production)
	GRP 801:	P70	(U.K. Production)
	GRP 901:	P6300/P6360	(U.S.A. Production)
*9	808-846004-010-A:	P6300, 115 V	(Japan Production)
		P6300/P6360, 115 V	(U.S.A. Production)
	808-840491-001-A:	P70/P6300, 230 V	(Japan Production)
	808-840491-003-A:	P6300, 230 V, Australia model	(Japan Production)
	808-846856-001-A:	P70, 230 V	(U.K. Production)
	808-846856-002-A:	P60, 230 V, Non-plug type	(U.K. Production)
*10	GRP 001:	P70	
	GRP 401:	P6300	

Figure 6-3 Family Tree - P70/P6300 (16/16)

Pinwriter P60/P6200 Major Assembly (136-218451-GRP-0)

ITEM	PART NAME	PART NUMBER	QTY*												
			GRP: 200	203	204	206	208	301	302	303	304	305	306	408	409
1	Printer Unit (N) (See Figure 6-6 for breakdown)	136-218454-200-A	1	—	—	—	—	—	—	—	—	—	—	—	—
1	Printer Unit (N) (See Figure 6-6 for breakdown)	136-218454-202-A	—	—	—	—	1	—	—	—	—	—	—	—	—
1	Printer Unit (N) (See Figure 6-6 for breakdown)	136-218454-203-A	—	1	1	1	—	—	—	—	—	—	—	—	—
1	Printer Unit (N) (See Figure 6-6 for breakdown)	136-218454-303-A	—	—	—	—	—	1	1	1	1	1	1	—	—
1	Printer Unit (N) (See Figure 6-6 for breakdown)	136-218454-402-A	—	—	—	—	—	—	—	—	—	—	—	1	—
1	Printer Unit (N) (See Figure 6-6 for breakdown)	136-218454-403-A	—	—	—	—	—	—	—	—	—	—	—	—	1
2	Logo Label	136-707134-201-A	—	1	—	—	—	—	—	—	—	—	—	—	—
2	Logo Label	136-707134-202-A	1	—	1	1	1	—	—	—	—	—	—	—	—
2	Logo Label	136-707134-301-A	—	—	—	—	—	1	1	1	1	1	1	—	—
2	Logo Label	136-707134-401-A	—	—	—	—	—	—	—	—	—	—	—	1	1
3	Control Nameplate	135-707137-201-A	—	1	—	—	—	—	—	—	—	—	—	—	—
3	Control Nameplate	135-707137-202-A	1	—	—	—	1	—	—	—	—	—	—	—	—
3	Control Nameplate	135-707137-203-A	—	—	1	1	—	—	—	—	—	—	—	—	—
3	Control Nameplate	135-707137-301-A	—	—	—	—	—	1	1	1	1	1	1	—	—
3	Control Nameplate	135-707137-401-A	—	—	—	—	—	—	—	—	—	—	—	1	1
4	Sheet Guide	136-846416-001-A	1	1	1	1	1	—	—	—	—	—	—	—	—
4	Sheet Guide	136-846416-301-A	—	—	—	—	—	1	1	1	1	1	1	—	—
4	Sheet Guide	136-846416-401-A	—	—	—	—	—	—	—	—	—	—	—	1	1
5	Power Cord Set	808-840491-001-A	—	1	—	1	—	—	—	—	—	—	—	—	—
5	Power Cord Set	808-840491-003-A	—	—	1	—	—	—	—	—	—	—	—	—	—
5	Power Cord Set	808-846004-010-A	1	—	—	—	1	—	—	—	—	—	—	1	1
5	Power Cord Set	808-846856-001-A	—	—	—	—	—	1	1	1	—	1	—	—	—
5	Power Cord Set	808-846856-002-A	—	—	—	—	—	—	—	—	1	—	1	—	—
6	Black Nylon Ribbon	808-867928-301-A	1	1	1	1	1	1	1	1	1	1	1	1	1
7**	Black Multistrike Film Ribbon	808-869921-301-A	1	1	1	1	1	1	1	1	1	1	1	1	1
8**	Color Nylon Ribbon	808-867928-311-A	1	1	1	1	1	1	1	1	1	1	1	1	1
9	Reference Sheet	136-843464-001-A	1	1	1	1	1	1	1	1	1	1	1	1	1
10	Paper Set Piece (L)	136-846418-001-A	1	1	1	1	1	—	—	—	—	—	—	—	—
10	Paper Set Piece (L)	136-846418-301-A	—	—	—	—	—	1	1	1	1	1	1	—	—
10	Paper Set Piece (L)	136-846418-401-A	—	—	—	—	—	—	—	—	—	—	—	1	1
11	Paper Set Piece (R)	136-846419-001-A	1	1	1	1	1	—	—	—	—	—	—	—	—
11	Paper Set Piece (R)	136-846419-301-A	—	—	—	—	—	1	1	1	1	1	1	—	—
11	Paper Set Piece (R)	136-846419-401-A	—	—	—	—	—	—	—	—	—	—	—	1	1
12	Silent Canopy Assembly	136-217750-001-A	1	1	1	1	1	—	—	—	—	—	—	—	—
12	Silent Canopy Assembly	136-217750-301-A	—	—	—	—	—	1	1	1	1	1	1	—	—
12	Silent Canopy Assembly	136-217750-401-A	—	—	—	—	—	—	—	—	—	—	—	1	1
Optional Kits:															
13	RS-232C Kit (See Figure 6-37 for breakdown)	136-217741-001-A	1	1	1	1	1	1	1	1	1	1	1	1	1
14	Tractor Unit (S) (See Figure 6-39 for breakdown)	136-218470-001-A	1	1	1	1	1	1	1	1	1	1	1	1	1
15	Tractor Cover (S) Assembly	136-846898-001-A	1	1	1	1	1	1	1	1	1	1	1	1	1
16	1 Bin Sheet Feeder Unit (S) (See Figure 6-41 for breakdown)	136-218948-001-A	1	1	1	1	1	1	1	1	1	1	1	1	1
17	Canopy (S)	136-846890-001-A	1	1	1	1	1	1	1	1	1	1	1	1	1
18	Color Kit	136-218469-001-A	1	1	1	1	1	1	1	1	1	1	1	1	1

*		
*	GRP 200, 208:	P6200, 115 V (Japan Production)
	GRP 204, 206:	P6200, 230 V (Japan Production)
	GRP 203:	P60, 230 V (Japan Production)
	GRP 301 - 306:	P60, 230 V (U.K. Production)
	GRP 408:	P6200, 115 V (U.S.A. Production)
	GRP 409:	P6260, 115 V (U.S.A. Production)

** Optional part

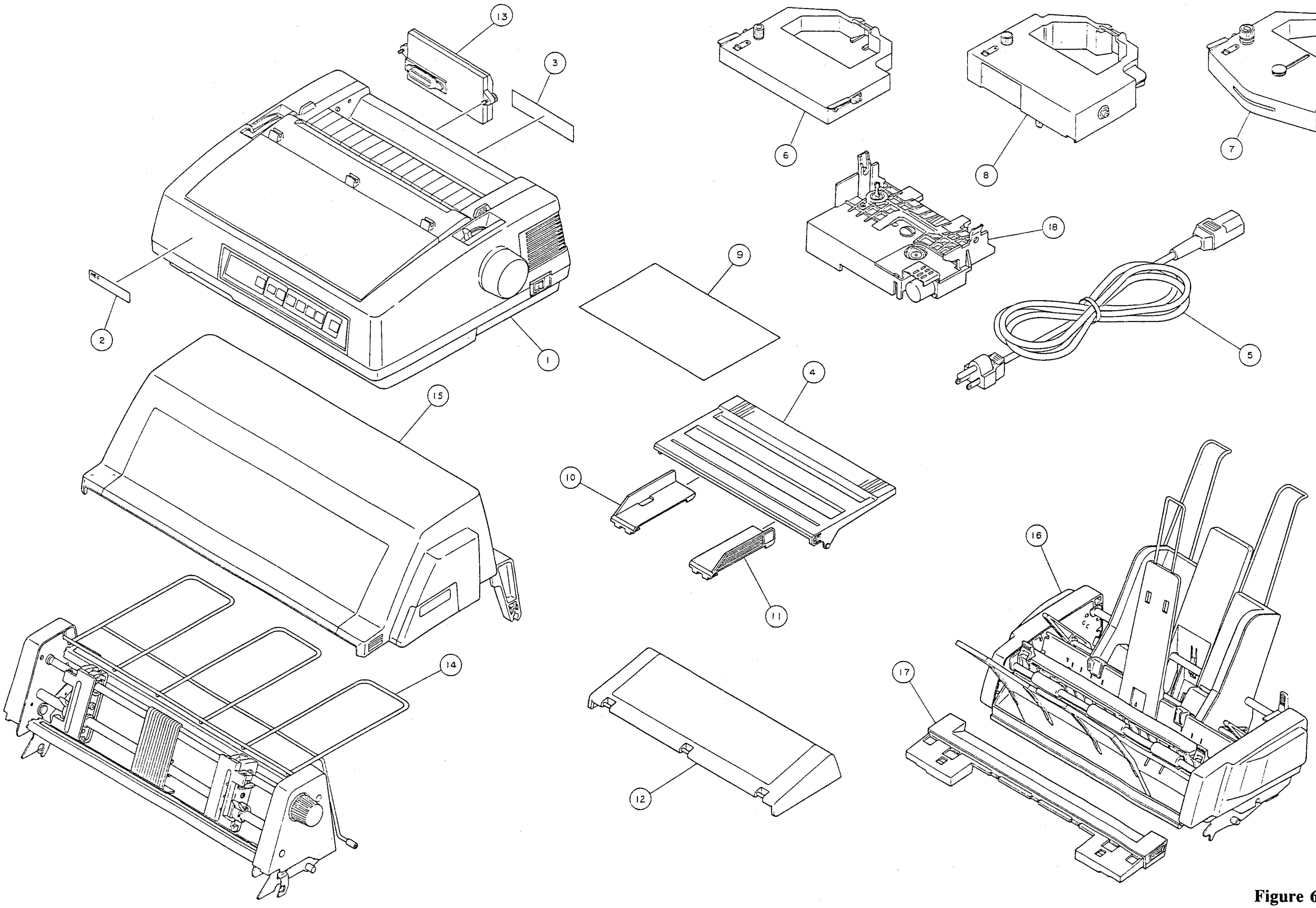

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Figure 6-4 Pinwriter P60/P6200

Pinwriter P70/P6300 Major Assembly (136-218451-GRP-0)

ITEM	PART NAME	PART NUMBER	QTY* GRP: 700	703	704	706	708	801	802	803	804	805	806	908	909
1	Printer Unit (N) (See Figure 6-7 for breakdown)	136-218454-700-A	1	—	—	—	—	—	—	—	—	—	—	—	—
1	Printer Unit (N) (See Figure 6-7 for breakdown)	136-218454-702-A	—	—	—	—	1	—	—	—	—	—	—	—	—
1	Printer Unit (N) (See Figure 6-7 for breakdown)	136-218454-703-A	—	1	1	1	—	—	—	—	—	—	—	—	—
1	Printer Unit (N) (See Figure 6-7 for breakdown)	136-218454-803-A	—	—	—	—	—	1	1	1	1	1	1	—	—
1	Printer Unit (N) (See Figure 6-7 for breakdown)	136-218454-902-A	—	—	—	—	—	—	—	—	—	—	—	1	—
1	Printer Unit (N) (See Figure 6-7 for breakdown)	136-218454-903-A	—	—	—	—	—	—	—	—	—	—	—	—	1
2	Logo Label	136-707134-701-A	—	1	—	—	—	—	—	—	—	—	—	—	—
2	Logo Label	136-707134-702-A	1	—	1	1	1	—	—	—	—	—	—	—	—
2	Logo Label	136-707134-801-A	—	—	—	—	—	1	1	1	1	1	1	—	—
2	Logo Label	136-707134-901-A	—	—	—	—	—	—	—	—	—	—	—	1	1
3	Control Nameplate	135-707137-701-A	—	1	—	—	—	—	—	—	—	—	—	—	—
3	Control Nameplate	135-707137-702-A	1	—	—	—	1	—	—	—	—	—	—	—	—
3	Control Nameplate	135-707137-703-A	—	—	1	1	—	—	—	—	—	—	—	—	—
3	Control Nameplate	135-707137-801-A	—	—	—	—	—	1	1	1	1	1	1	—	—
3	Control Nameplate	135-707137-901-A	—	—	—	—	—	—	—	—	—	—	—	1	1
4	Sheet Guide	136-846417-001-A	1	1	1	1	1	—	—	—	—	—	—	—	—
4	Sheet Guide	136-846417-301-A	—	—	—	—	—	1	1	1	1	1	1	—	—
4	Sheet Guide	136-846417-401-A	—	—	—	—	—	—	—	—	—	—	—	1	1
5	Power Cord Set	808-840491-001-A	—	1	—	1	—	—	—	—	—	—	—	—	—
5	Power Cord Set	808-840491-003-A	—	—	1	—	—	—	—	—	—	—	—	—	—
5	Power Cord Set	808-846004-010-A	1	—	—	—	1	—	—	—	—	—	—	1	1
5	Power Cord Set	808-846856-001-A	—	—	—	—	—	1	1	1	—	1	—	—	—
5	Power Cord Set	808-846856-002-A	—	—	—	—	—	—	—	—	1	—	1	—	—
6	Black Nylon Ribbon	808-867928-301-A	1	1	1	1	1	1	1	1	1	1	1	1	1
7**	Black Multistrike Film Ribbon	808-869921-301-A	1	1	1	1	1	1	1	1	1	1	1	1	1
8**	Color Nylon Ribbon	808-867928-311-A	1	1	1	1	1	1	1	1	1	1	1	1	1
9	Reference Sheet	136-843464-001-A	1	1	1	1	1	1	1	1	1	1	1	1	1
10	Paper Set Piece (L)	136-846418-001-A	1	1	1	1	1	—	—	—	—	—	—	—	—
10	Paper Set Piece (L)	136-846418-301-A	—	—	—	—	—	1	1	1	1	1	1	—	—
10	Paper Set Piece (L)	136-846418-401-A	—	—	—	—	—	—	—	—	—	—	—	1	1
11	Paper Set Piece (R)	136-846419-001-A	1	1	1	1	1	—	—	—	—	—	—	—	—
11	Paper Set Piece (R)	136-846419-301-A	—	—	—	—	—	1	1	1	1	1	1	—	—
11	Paper Set Piece (R)	136-846419-401-A	—	—	—	—	—	—	—	—	—	—	—	1	1
12	Silent Canopy Assembly	136-217750-001-A	1	1	1	1	1	—	—	—	—	—	—	—	—
12	Silent Canopy Assembly	136-217750-301-A	—	—	—	—	—	1	1	1	1	1	1	—	—
12	Silent Canopy Assembly	136-217750-401-A	—	—	—	—	—	—	—	—	—	—	—	1	1
Optional Kits:															
13	RS-232C Kit (See Figure 6-37 for breakdown)	136-217741-001-A	1	1	1	1	1	1	1	1	1	1	1	1	1
14	Tractor Unit (S) (See Figure 6-39 for breakdown)	136-218470-001-A	1	1	1	1	1	1	1	1	1	1	1	1	1
15	Tractor Cover (S) Assembly	136-846898-001-A	1	1	1	1	1	1	1	1	1	1	1	1	1
16	1 Bin Sheet Feeder Unit (S) (See Figure 6-41 for breakdown)	136-218948-001-A	1	1	1	1	1	1	1	1	1	1	1	1	1
17	Canopy (S)	136-846890-001-A	1	1	1	1	1	1	1	1	1	1	1	1	1
18	2Bin Sheet Feeder Unit (L) (See Figure 6-47 for breakdown)	136-218949-501-A	1	1	1	1	1	1	1	1	1	1	1	1	1
19	Color Kit	136-218469-001-A	1	1	1	1	1	1	1	1	1	1	1	1	1

* GRP 700, 708: P6200, 115 V (Japan Production)
GRP 704, 706: P6200, 230 V (Japan Production)
GRP 703: P60, 230 V (Japan Production)
GRP 801 - 806: P60, 230 V (U.K. Production)
GRP 908: P6200, 115 V (U.S.A. Production)
GRP 909: P6260, 115 V (U.S.A. Production)

** Optional part

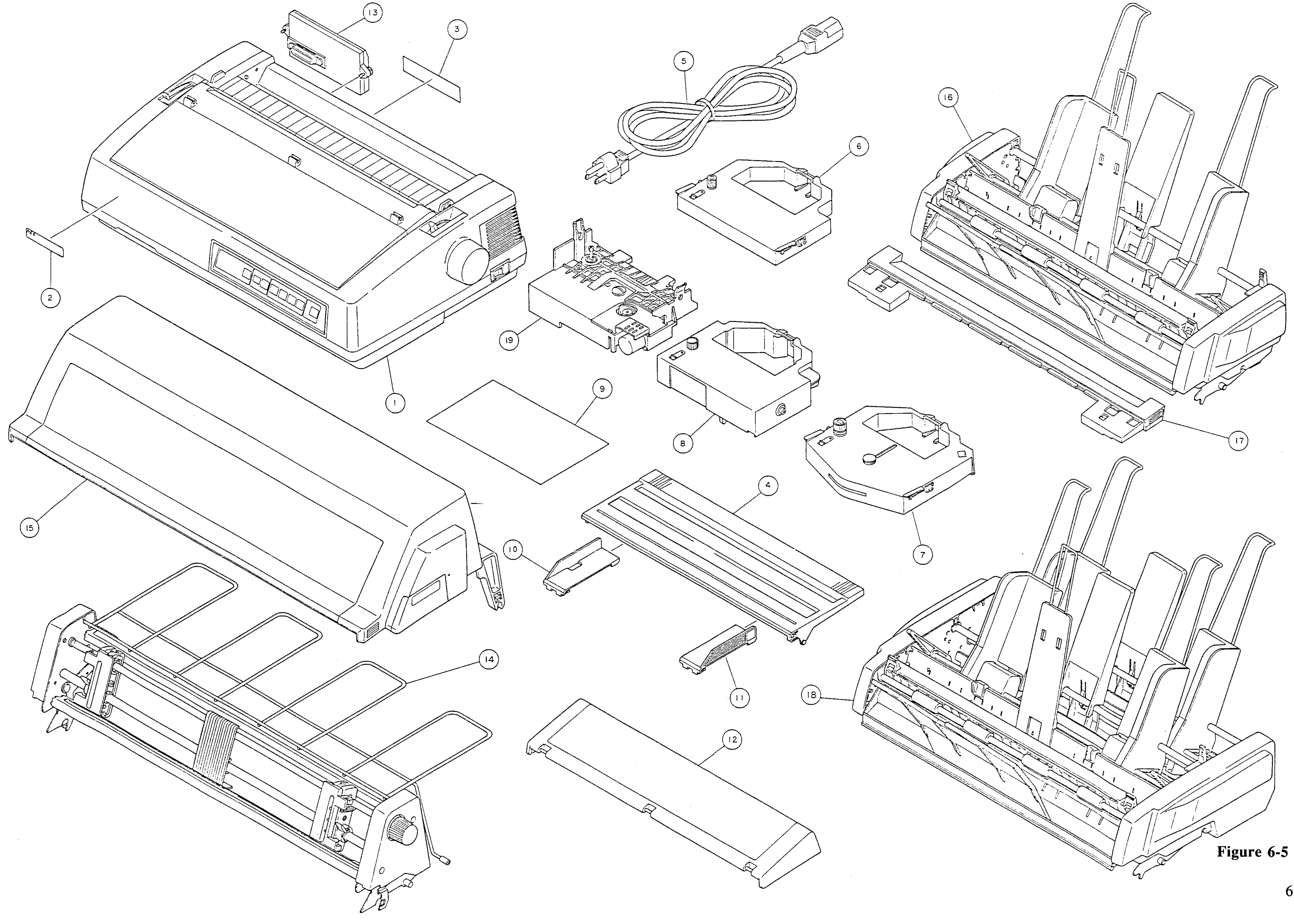
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Figure 6-5 Pinwriter P70/P6300

Printer Unit (N) (136-218454-GRP-A)

ITEM	PART NAME	PART NUMBER	QTY*					
			200	202	203	303	402	403
1	Mechanism Unit (N) (See Figure 6-8 for breakdown)	136-218455-001-A	1	1	1	1	1	1
2	MSC-24 P/H Assembly	136-218474-002-A	1	1	1	1	1	1
3	Housing Unit	136-215357-001-A	1	1	1	—	—	—
3	Housing Unit	136-215357-301-A	—	—	—	1	—	—
3	Housing Unit	136-215357-401-A	—	—	—	—	1	1
3-1	Base Cover Assembly (N) (See Figure 6-23 for breakdown)	136-215363-001-A	1	1	1	—	—	—
3-1	Base Cover Assembly (N) (See Figure 6-23 for breakdown)	136-215363-301-A	—	—	—	1	—	—
3-1	Base Cover Assembly (N) (See Figure 6-23 for breakdown)	136-215363-401-A	—	—	—	—	1	1
3-2	Upper Cover Assembly (N) (See Figure 6-25 for breakdown)	136-215358-001-A	1	1	1	—	—	—
3-2	Upper Cover Assembly (N) (See Figure 6-25 for breakdown)	136-215358-301-A	—	—	—	1	—	—
3-2	Upper Cover Assembly (N) (See Figure 6-25 for breakdown)	136-215358-401-A	—	—	—	—	1	1
3-201	Screw, CPIMSx4x8x3GF	805-000104-008-0	1	1	1	1	1	1
3-202	Washer, #2STLWAx4x3GF	808-866295-102-A	1	1	1	1	1	1
3-203	Washer, PIWAx4x3GF	805-610104-0	1	1	1	1	1	1
4	PSD Operator Panel (See Figure 6-27 for breakdown)	808-818170-301-A	1	1	1	1	1	1
5	PSD Power (B) (See Figure 6-28 for breakdown)	808-891104-002-A	1	1	—	—	1	1
5	PSD Power (C) (See Figure 6-29 for breakdown)	808-891104-003-A	—	—	1	—	—	—
5	PSD Power (C) (See Figure 6-30 for breakdown)	808-891104-303-A	—	—	—	1	—	—
6	G8ESPA PCB Assembly (See Figure 6-31 for breakdown)	136-436268-001-A	—	1	1	—	—	1
6	G8ESPB PCB Assembly (See Figure 6-32 for breakdown)	136-436268-002-A	1	—	—	—	—	—
6	G8ESQA PCB Assembly (See Figure 6-33 for breakdown)	136-436269-001-A	—	—	—	—	1	—
6	G8ESR PCB Assembly (See Figure 6-34 for breakdown)	136-436270-001-A	—	—	—	1	—	—
7	G8ESTA PCB Assembly (See Figure 6-35 for breakdown)	136-436272-001-A	1	1	1	—	1	1
7	G8ESV PCB Assembly (See Figure 6-36 for breakdown)	136-436274-001-A	—	—	—	1	—	—
8	DC Cable	808-857768-101-A	1	1	1	1	1	1
9	Platen Knob	136-846283-001-A	1	1	1	1	1	1
10	Font Holder	136-843451-001-A	1	1	1	—	—	—
10	Font Holder	136-843451-301-A	—	—	—	1	—	—
10	Font Holder	136-843451-401-A	—	—	—	—	1	1
11	Shield Cover Assembly	136-217753-001-A	1	1	1	1	1	1
12	Cable Cover	136-843463-001-A	1	1	1	—	—	—
12	Cable Cover	136-843463-301-A	—	—	—	1	—	—
12	Cable Cover	136-843463-401-A	—	—	—	—	1	1
13	Carrier Cable Cover	136-843457-001-A	1	1	1	—	—	—
13	Carrier Cable Cover	136-843457-301-A	—	—	—	1	—	—
13	Carrier Cable Cover	136-843457-401-A	—	—	—	—	1	1
14	Power Switch Cable	808-857767-001-A	1	1	—	—	1	1
14	Power Switch Cable	808-857767-002-A	—	—	1	1	—	—
15	Shield Plate	136-846894-001-A	1	1	1	1	1	1
16	FG Spring	136-846906-001-A	1	1	1	1	1	1
201	Screw, PL-CPIMSx5x8x15BF	805-300005-008-0	4	4	4	4	4	4
202	Screw, BCBTSx4x10x15BF	808-802044-410-0	2	2	2	2	2	2
203	Screw, PL-CPIMSx3x8x15BF	808-300003-008-0	20	20	20	20	20	20
204	Screw, PL-CPIMSx4x8x15BF	805-300004-008-0	1	1	1	1	1	1
205	Special Screw	136-852788-001-A	3	3	3	3	3	3
206	Screw, PL-CPIMSx3x10x15BF	805-300003-010-0	2	2	2	2	2	2

*		
*	GRP 200, 202:	P6200, 115 V (Japan Production)
	GRP 203:	P60/P6200, 230 V (Japan Production)
	GRP 303:	P60, 230 V (U.K. Production)
	GRP 402:	P6200, 115 V (U.S.A. Production)
	GRP 403:	P6260, 115 V (U.S.A. Production)

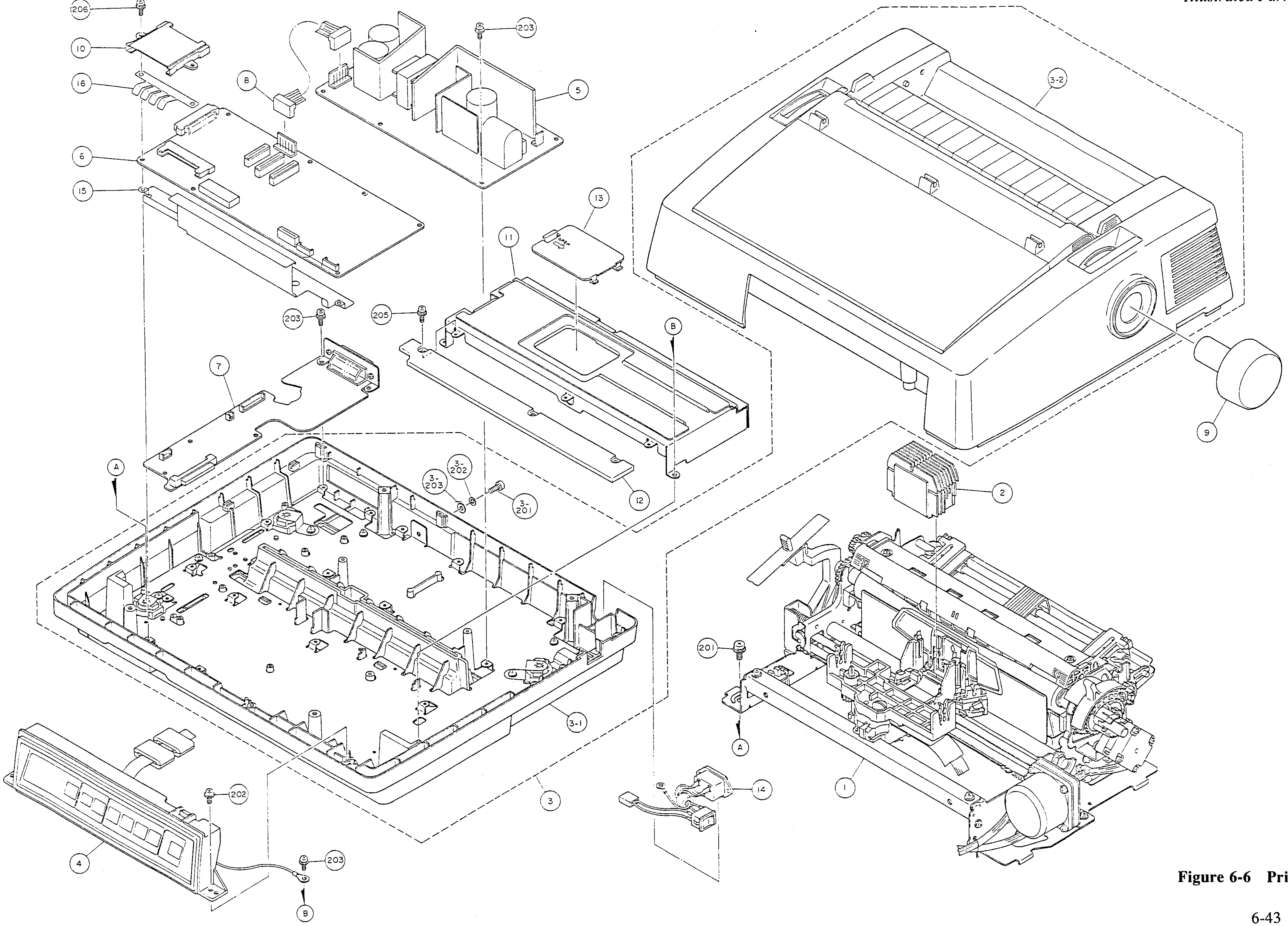
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Figure 6-6 Printer Unit (N)

Printer Unit (W) (136-218454-GRP-A)

ITEM	PART NAME	PART NUMBER	QTY*					
			700	702	703	803	902	903
1	Mechanism Unit (W) (See Figure 6-9 for breakdown)	136-218455-501-A	1	1	1	1	1	1
2	MSC-24 P/H Assembly	136-218474-002-A	1	1	1	1	1	1
3	Housing Unit	136-215357-501-A	1	1	1	—	—	—
3	Housing Unit	136-215357-801-A	—	—	—	1	—	—
3	Housing Unit	136-215357-901-A	—	—	—	—	1	1
3-1	Base Cover Assembly (W) (See Figure 6-24 for breakdown)	136-215363-501-A	1	1	1	—	—	—
3-1	Base Cover Assembly (W) (See Figure 6-24 for breakdown)	136-215363-801-A	—	—	—	1	—	—
3-1	Base Cover Assembly (W) (See Figure 6-24 for breakdown)	136-215363-901-A	—	—	—	—	1	1
3-2	Upper Cover Assembly (W) (See Figure 6-26 for breakdown)	136-215358-501-A	1	1	1	—	—	—
3-2	Upper Cover Assembly (W) (See Figure 6-26 for breakdown)	136-215358-801-A	—	—	—	1	—	—
3-2	Upper Cover Assembly (W) (See Figure 6-26 for breakdown)	136-215358-901-A	—	—	—	—	1	1
3-201	Screw, CPIMSx4x8x3GF	805-000104-008-0	1	1	1	1	1	1
3-202	Washer, #2STLWAx4x3GF	808-866295-102-A	1	1	1	1	1	1
3-203	Washer, PIWAx4x3GF	805-610104-0	1	1	1	1	1	1
4	PSD Operator Panel (See Figure 6-27 for breakdown)	808-818170-301-A	1	1	1	1	1	1
5	PSD Power (B) (See Figure 6-28 for breakdown)	808-891104-002-A	1	1	—	—	1	1
5	PSD Power (C) (See Figure 6-29 for breakdown)	808-891104-003-A	—	—	1	—	—	—
5	PSD Power (C) (See Figure 6-30 for breakdown)	808-891104-303-A	—	—	—	1	—	—
6	G8ESPA PCB Assembly (See Figure 6-31 for breakdown)	136-436268-001-A	—	1	1	—	—	1
6	G8ESPB PCB Assembly (See Figure 6-32 for breakdown)	136-436268-002-A	1	—	—	—	—	—
6	G8ESQA PCB Assembly (See Figure 6-33 for breakdown)	136-436269-001-A	—	—	—	—	1	—
6	G8ESR PCB Assembly (See Figure 6-34 for breakdown)	136-436270-001-A	—	—	—	1	—	—
7	G8ESTA PCB Assembly (See Figure 6-35 for breakdown)	136-436272-001-A	1	1	1	—	1	1
7	G8ESV PCB Assembly (See Figure 6-36 for breakdown)	136-436274-001-A	—	—	—	1	—	—
8	DC Cable	808-857768-201-A	1	1	1	1	1	1
9	Platen Knob	136-846283-001-A	1	1	1	1	1	1
10	Font Holder	136-843451-001-A	1	1	1	—	—	—
10	Font Holder	136-843451-301-A	—	—	—	1	—	—
10	Font Holder	136-843451-401-A	—	—	—	—	1	1
11	Shield Cover Assembly	136-217753-001-A	1	1	1	1	1	1
12	Cable Cover	136-843463-001-A	1	1	1	—	—	—
12	Cable Cover	136-843463-301-A	—	—	—	1	—	—
12	Cable Cover	136-843463-401-A	—	—	—	—	1	1
13	Carrier Cable Cover	136-843457-001-A	1	1	1	—	—	—
13	Carrier Cable Cover	136-843457-301-A	—	—	—	1	—	—
13	Carrier Cable Cover	136-843457-401-A	—	—	—	—	1	1
14	Power Switch Cable	808-857767-001-A	1	1	—	—	1	1
14	Power Switch Cable	808-857767-002-A	—	—	1	1	—	—
15	Shield Plate	136-846894-501-A	1	1	1	1	1	1
16	FG Spring	136-846906-001-A	1	1	1	1	1	1
201	Screw, PL-CPIMSx5x8x15BF	805-300005-008-0	4	4	4	4	4	4
202	Screw, BCBTSx4x10x15BF	808-802044-410-0	2	2	2	2	2	2
203	Screw, PL-CPIMSx3x8x15BF	808-300003-008-0	20	20	20	20	20	20
204	Screw, PL-CPIMSx4x8x15BF	805-300004-008-0	1	1	1	1	1	1
205	Special Screw	136-852788-001-A	3	3	3	3	3	3
206	Screw, PL-CPIMSx3x10x15BF	805-300003-010-0	2	2	2	2	2	2

* GRP 700, 702: P6300, 115 V (Japan Production)
GRP 703: P70/P6300, 230 V (Japan Production)
GRP 803: P70, 230 V (U.K. Production)
GRP 902: P6300, 115 V (U.S.A. Production)
GRP 903: P6360, 115 V (U.S.A. Production)

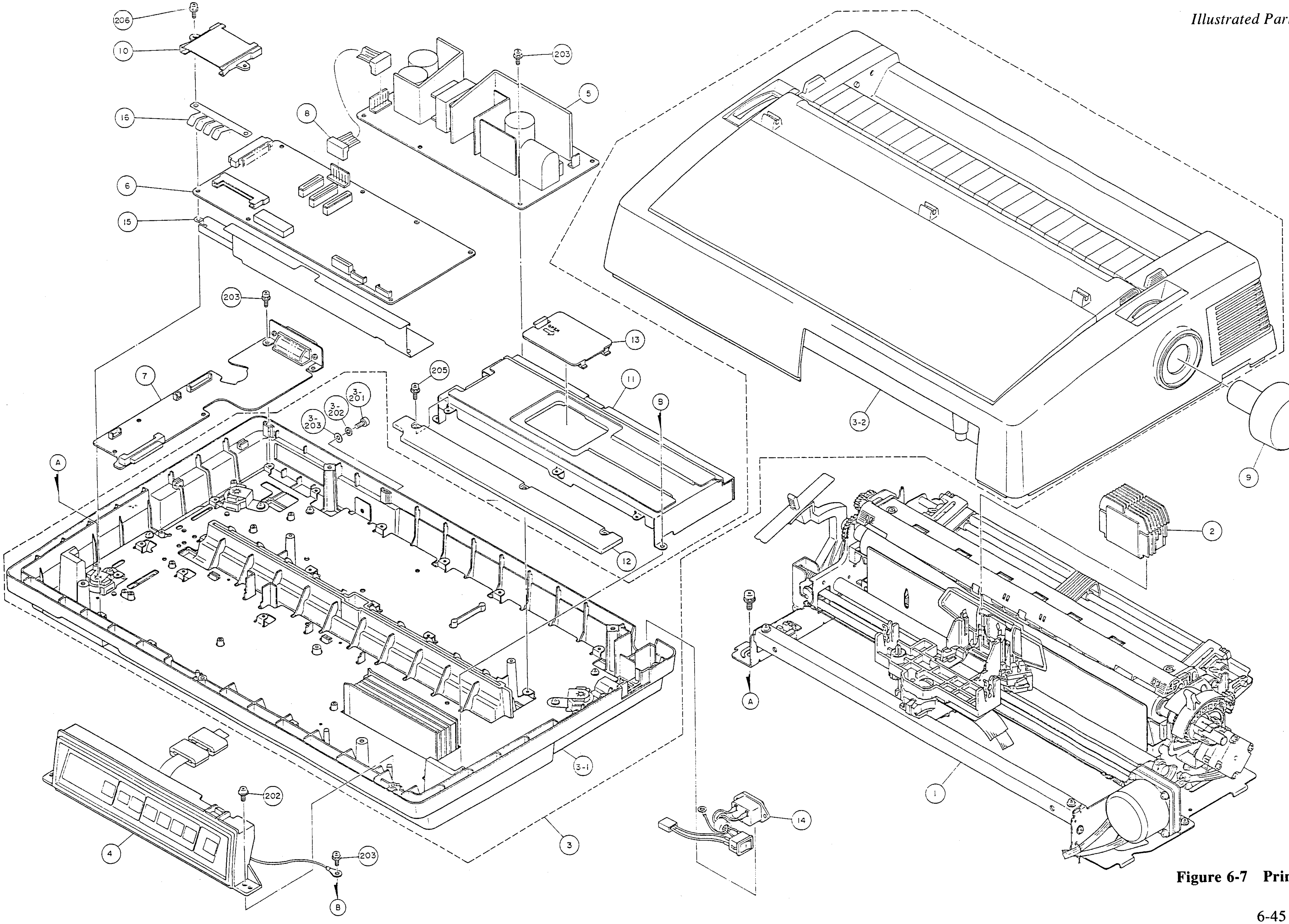
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Figure 6-7 Printer Unit (W)

Mechanism Unit (N) (136-218455-001-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Frame Unit (N) (See Figure 6-10 for breakdown)	136-218456-001-A	1
2	Ribbon Base (Black) Assembly	136-218465-001-A	1
3	Tractor Unit (N) (See Figure 6-19 for breakdown)	136-218463-001-A	1
4	Feed Roller Unit (N) (See Figure 6-21 for breakdown)	136-218464-001-A	1
201	Screw, STCS-CPIMSx4x6x15BF	808-802445-406-A	2

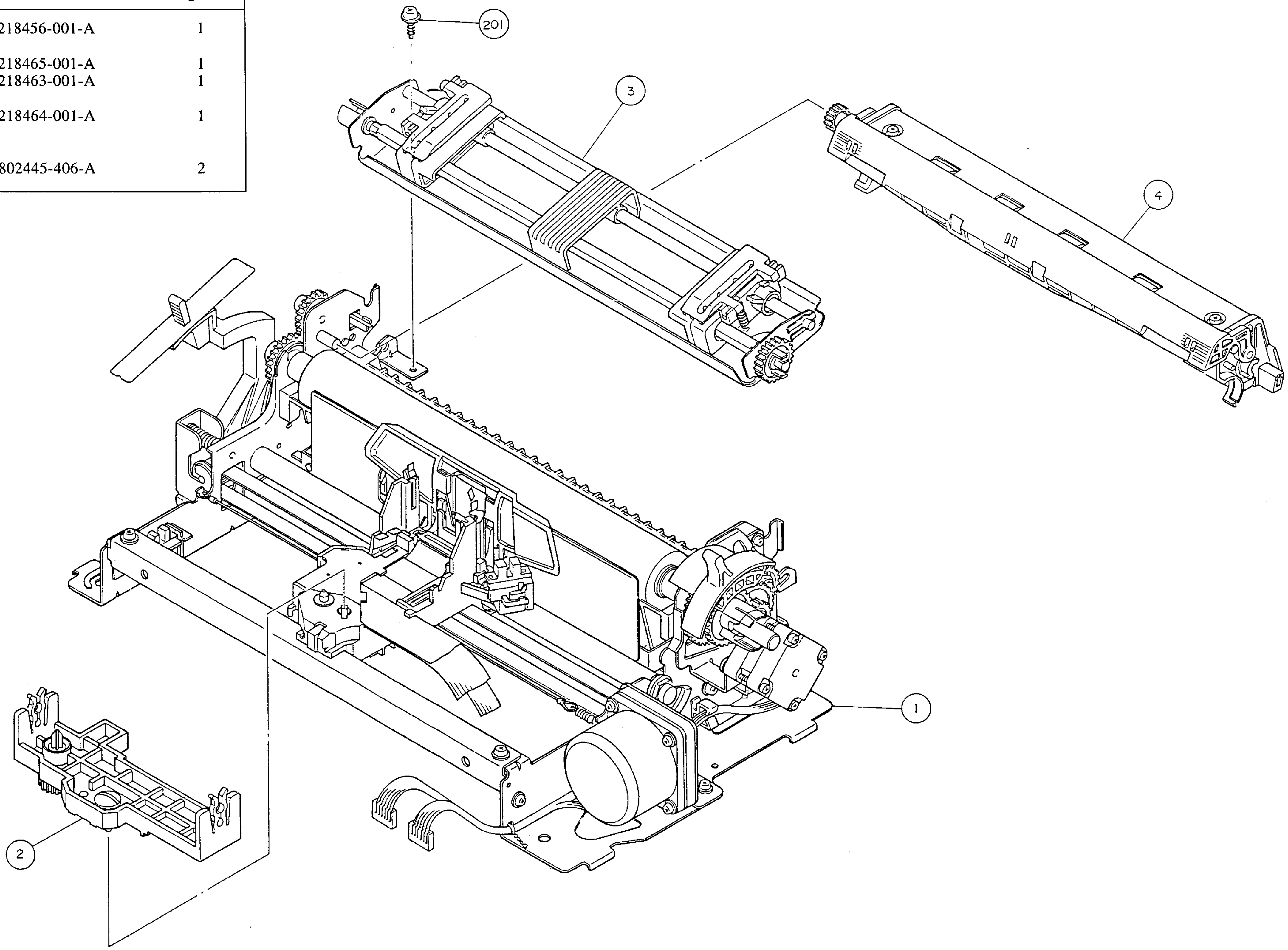

Figure 6-8 Mechanism Unit (N)

Mechanism Unit (W) (136-218455-501-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Frame Unit (W) (See Figure 6-11 for breakdown)	136-218456-501-A	1
2	Ribbon Base (Black) Assembly	136-218465-001-A	1
3	Tractor Unit (W) (See Figure 6-20 for breakdown)	136-218463-501-A	1
4	Feed Roller Unit (W) (See Figure 6-22 for breakdown)	136-218464-501-A	1
201	Screw, STCS-CPIMSx4x6x15BF	808-802445-406-A	2

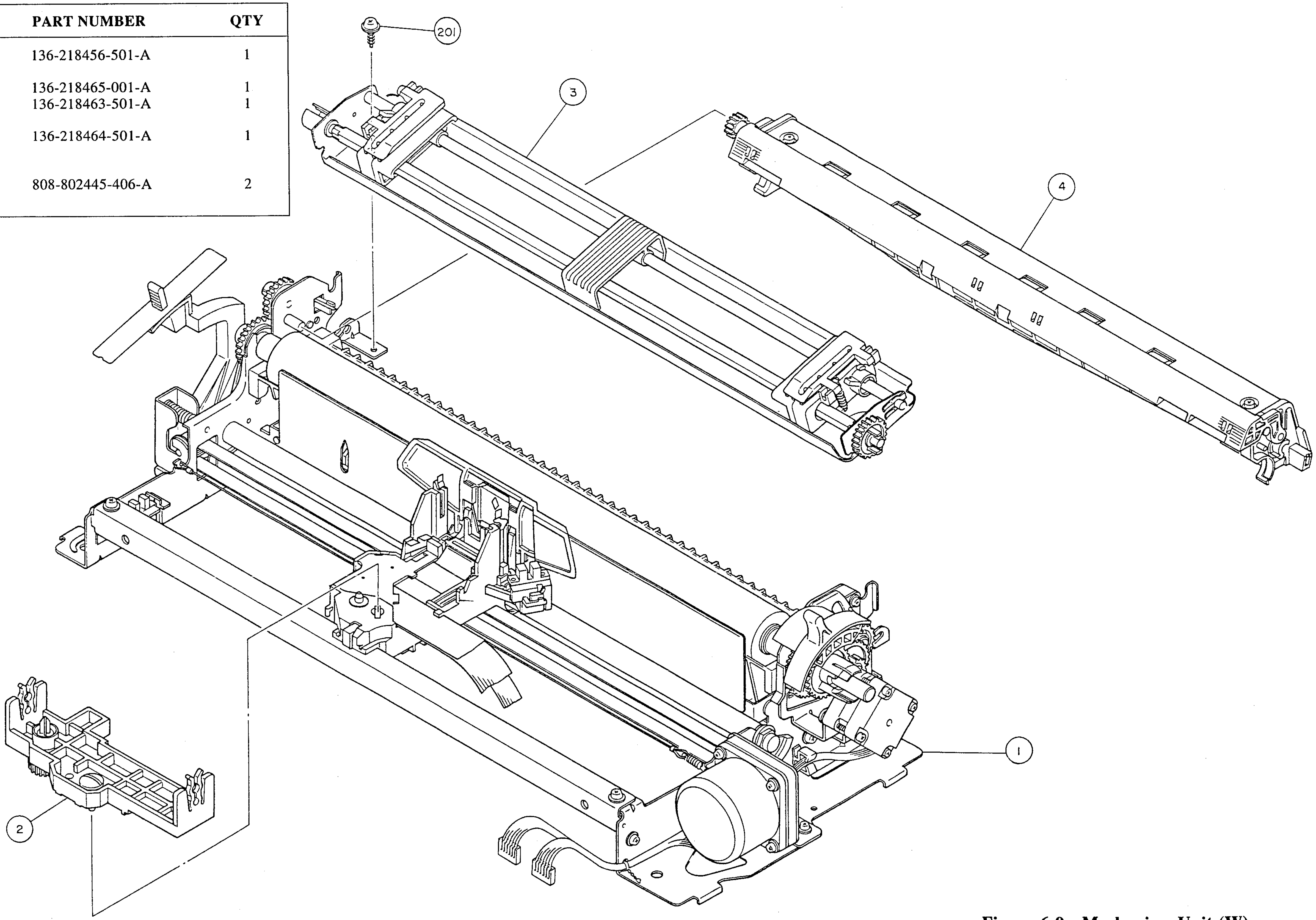

Figure 6-9 Mechanism Unit (W)

Frame Unit (N) (136-218456-001-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Frame Assembly (N) (See Figure 6-12 for breakdown)	136-218457-001-A	1
2	Paper Release Arm	136-846287-001-A	1
3	LF Motor Unit	136-218460-001-A	1
3-1	LF Motor Frame Subassembly	136-846276-001-A	1
3-2	Slide Gear	136-846311-001-A	1
3-3	Slide Gear Spring	136-846312-001-A	1
3-4	LF Gear	136-846310-001-A	1
3-5	LF Motor Assembly	808-869546-001-A	1
3-6	LF Plate	136-854346-001-A	1
3-201	Screw, PL-CPIMSx3x8x15BF	805-300003-008-0	3
4	SP Motor Unit	136-218459-001-A	1
4-1	SP Motor Bracket	136-846308-001-A	1
4-2	SP Motor Assembly	808-869545-001-A	1
4-3	FG Plate (SP)	136-846309-001-A	1
4-201	Screw, STCS-CPIMSx4x10x15BF	808-802445-410-A	4
5	Platen Assembly (N) (See Figure 6-16 for breakdown)	136-218461-001-A	1
6	Option Gear	136-846288-001-A	1
7	H.P Sensor Assembly	808-820754-001-A	1
8	Sensor & SW Assembly	808-820753-001-A	1
9	Carrier Unit (N)	136-218462-001-A	1
9-1	Carrier Assembly (N) (See Figure 6-18 for breakdown)	136-846266-001-A	1
9-2	Carrier Cable (N) Assembly	808-812392-001-A	1
10	Guide Shaft (N)	136-846284-001-A	1
11	Eccentric Bushing	136-846383-001-A	1
12	Gap Adjust Lever	136-846285-001-A	1
13	Lever Sheet	136-846438-002-A	1
14	Tension Arm Assembly	136-846302-001-A	1
14-1	Driven Pulley Assembly	136-846371-001-A	1
14-2	Driven Bushing (Roller Bearing)	808-868150-001-A	1
14-3	Driven Pulley Shaft	136-846380-001-A	1
14-4	Tension Arm	136-846370-001-A	1
14-5	Driven Pulley Collar	136-854413-001-A	1
15	Belt Tension Spring	136-846373-001-A	1
16	Wire Tension Spring	136-846356-001-A	1
201	Screw, STCS-CPIMSx4x6x15BF	808-802445-406-A	7
202	Screw, PL-CPIMSx4x10x15BF	808-300004-010-A	1
203	Screw, STSL-CPIMSx3x8x15BF	808-802446-308-A	2
204	Vinyl Twist-Tie	808-835074-005-A	1

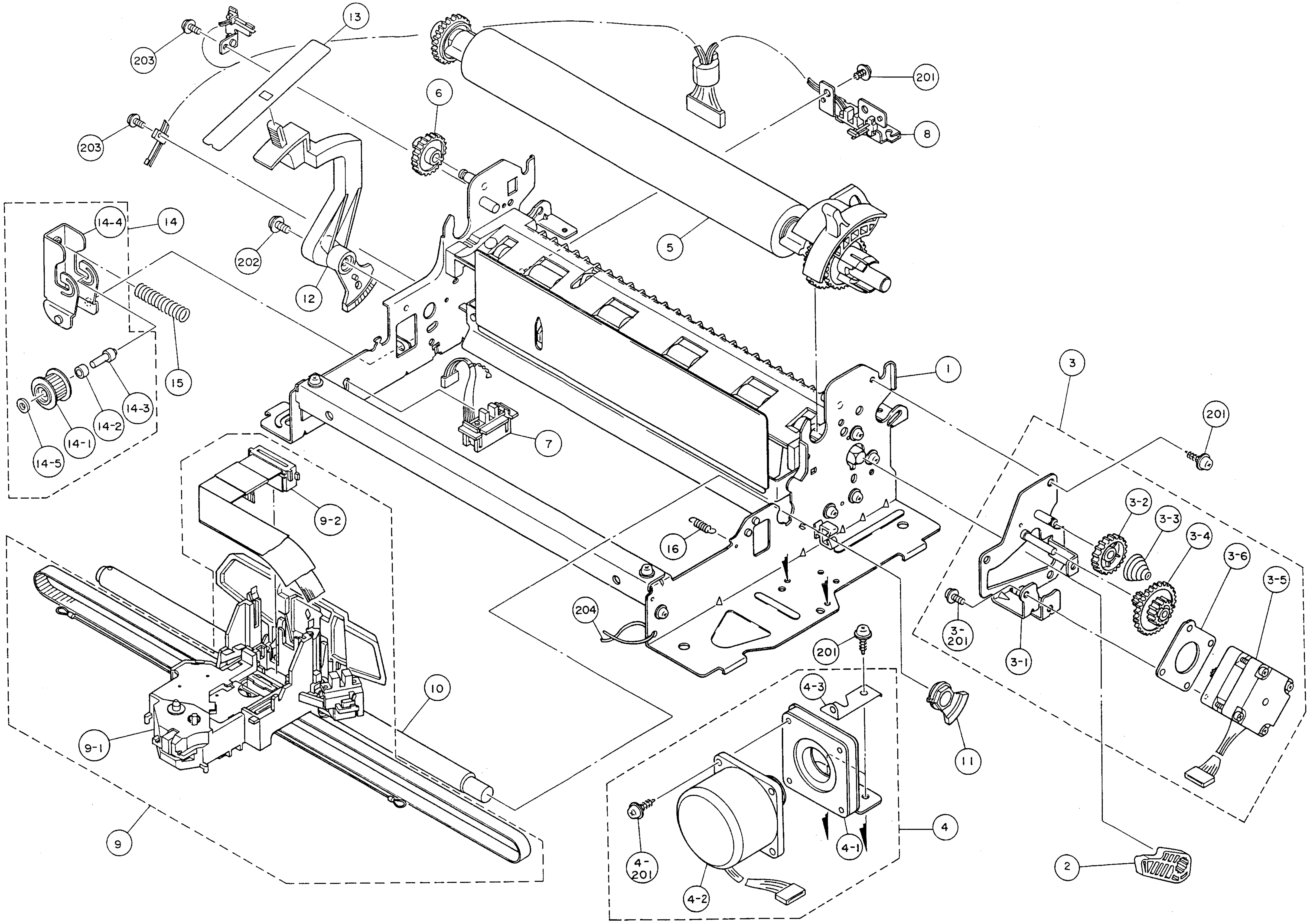
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Figure 6-10 Frame Unit (N)

Frame Unit (W) (136-218456-501-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Frame Assembly (W) (See Figure 6-13 for breakdown)	136-218457-501-A	1
2	Paper Release Arm	136-846287-001-A	1
3	LF Motor Unit	136-218460-001-A	1
3-1	LF Motor Frame Subassembly	136-846276-001-A	1
3-2	Slide Gear	136-846311-001-A	1
3-3	Slide Gear Spring	136-846312-001-A	1
3-4	LF Gear	136-846310-001-A	1
3-5	LF Motor Assembly	808-869546-001-A	1
3-6	LF Plate	136-854346-001-A	1
3-201	Screw, PL-CPIMSx3x8x15BF	805-300003-008-0	3
4	SP Motor Unit	136-218459-001-A	1
4-1	SP Motor Bracket	136-846308-001-A	1
4-2	SP Motor Assembly	808-869545-001-A	1
4-3	FG Plate (SP)	136-846309-001-A	1
4-201	Screw, STCS-CPIMSx4x10x15BF	808-802445-410-A	4
5	Platen Assembly (W) (See Figure 6-17 for breakdown)	136-218461-501-A	1
6	Option Gear	136-846288-001-A	1
7	H.P Sensor Assembly	808-820754-001-A	1
8	Sensor & SW Assembly	808-820753-001-A	1
9	Carrier Unit (W)	136-218462-501-A	1
9-1	Carrier Assembly (W) (See Figure 6-18 for breakdown)	136-846266-501-A	1
9-2	Carrier Cable (W) Assembly	808-812392-501-A	1
10	Guide Shaft (W)	136-846284-501-A	1
11	Eccentric Bushing	136-846383-001-A	1
12	Gap Adjust Lever	136-846285-001-A	1
13	Lever Sheet	136-846438-002-A	1
14	Tension Arm Assembly	136-846302-001-A	1
14-1	Driven Pulley Assembly	136-846371-001-A	1
14-2	Driven Bushing (Roller Bearing)	808-868150-001-A	1
14-3	Driven Pulley Shaft	136-846380-001-A	1
14-4	Tension Arm	136-846370-001-A	1
14-5	Driven Pulley Collar	136-854413-001-A	1
15	Belt Tension Spring	136-846373-001-A	1
16	Wire Tension Spring	136-846356-001-A	1
201	Screw, STCS-CPIMSx4x6x15BF	808-802445-406-A	7
202	Screw, PL-CPIMSx4x10x15BF	808-300004-010-A	1
203	Screw, STSL-CPIMSx3x8x15BF	808-802446-308-A	2
204	Vinyl Twist-Tie	808-835074-005-A	1

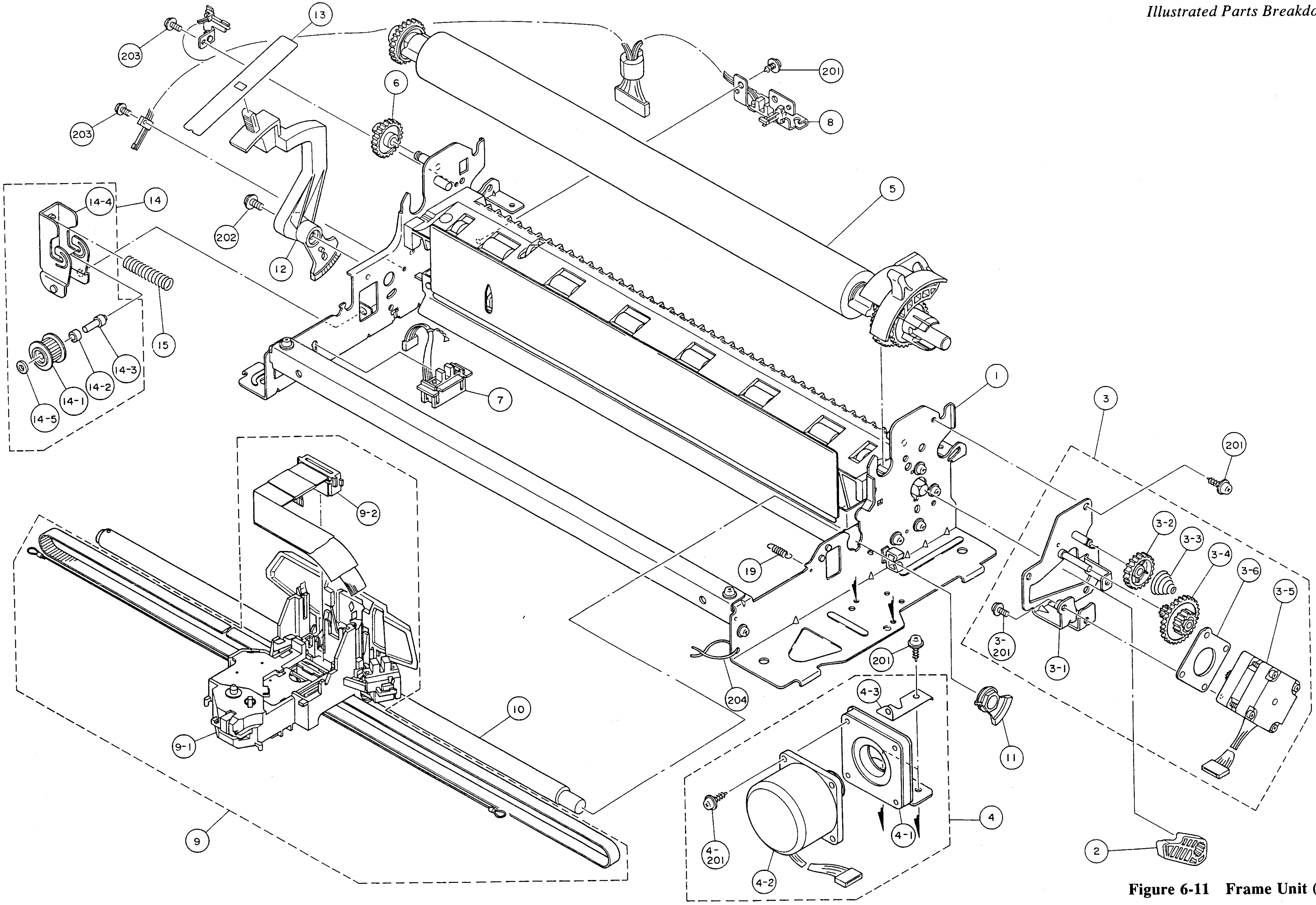
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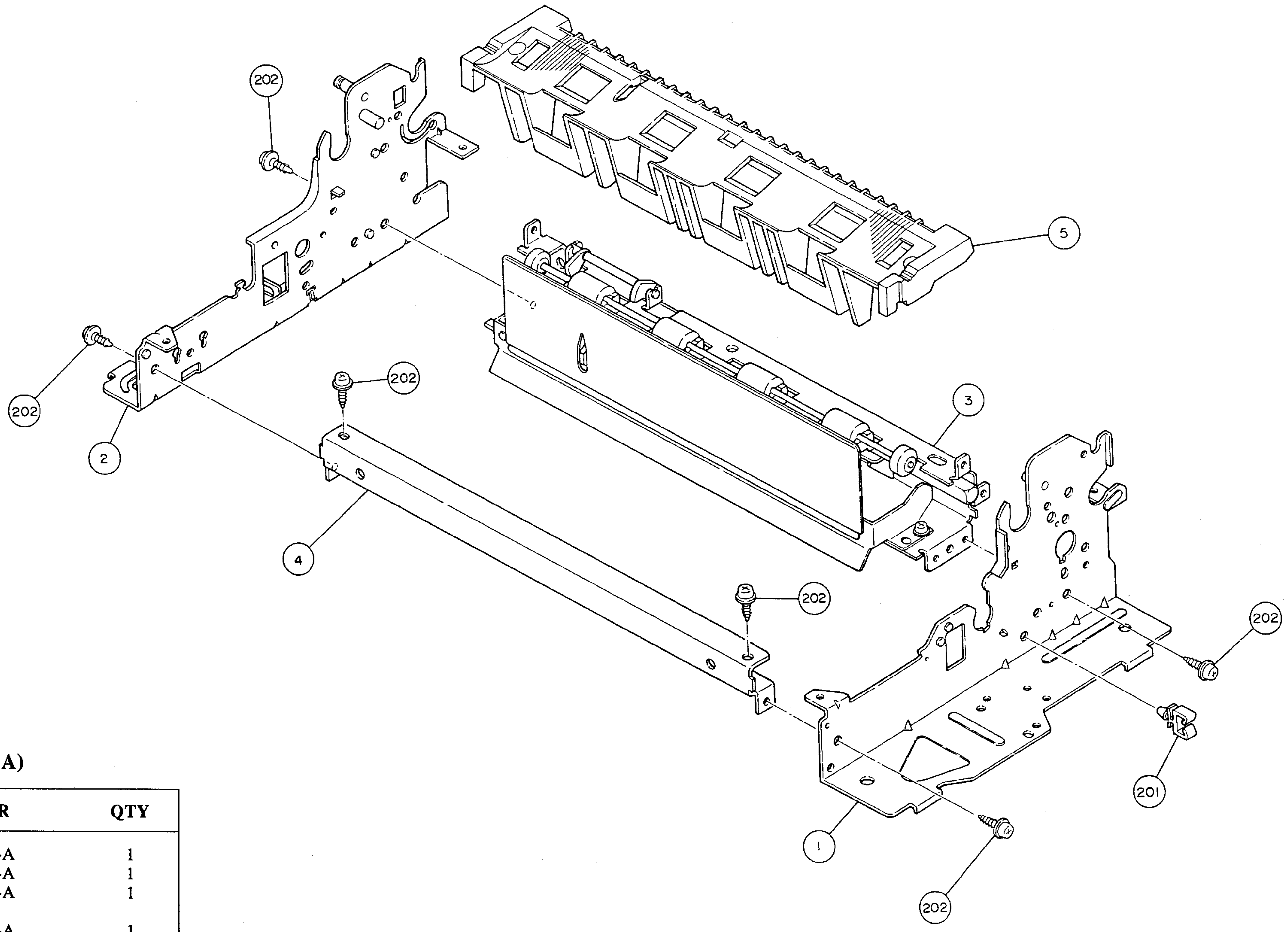
Figure 6-11 Frame Unit (W)



Frame Assembly (N) (136-218457-001-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Right Side Frame Subassembly	136-846265-001-A	1
2	Left Side Frame Subassembly	136-846265-002-A	1
3	Main Stay Assembly (N) (See Figure 6-14 for breakdown)	136-218466-001-A	1
4	Front Stay (N)	136-846297-001-A	1
5	Paper Guide (N)	136-846286-001-A	1
201	Wire Saddle WS-1NS	808-811031-001-A	1
202	Screw, STCS-CPIMSx4x6x15BF	808-802445-406-A	12

Figure 6-12 Frame Assembly (N)

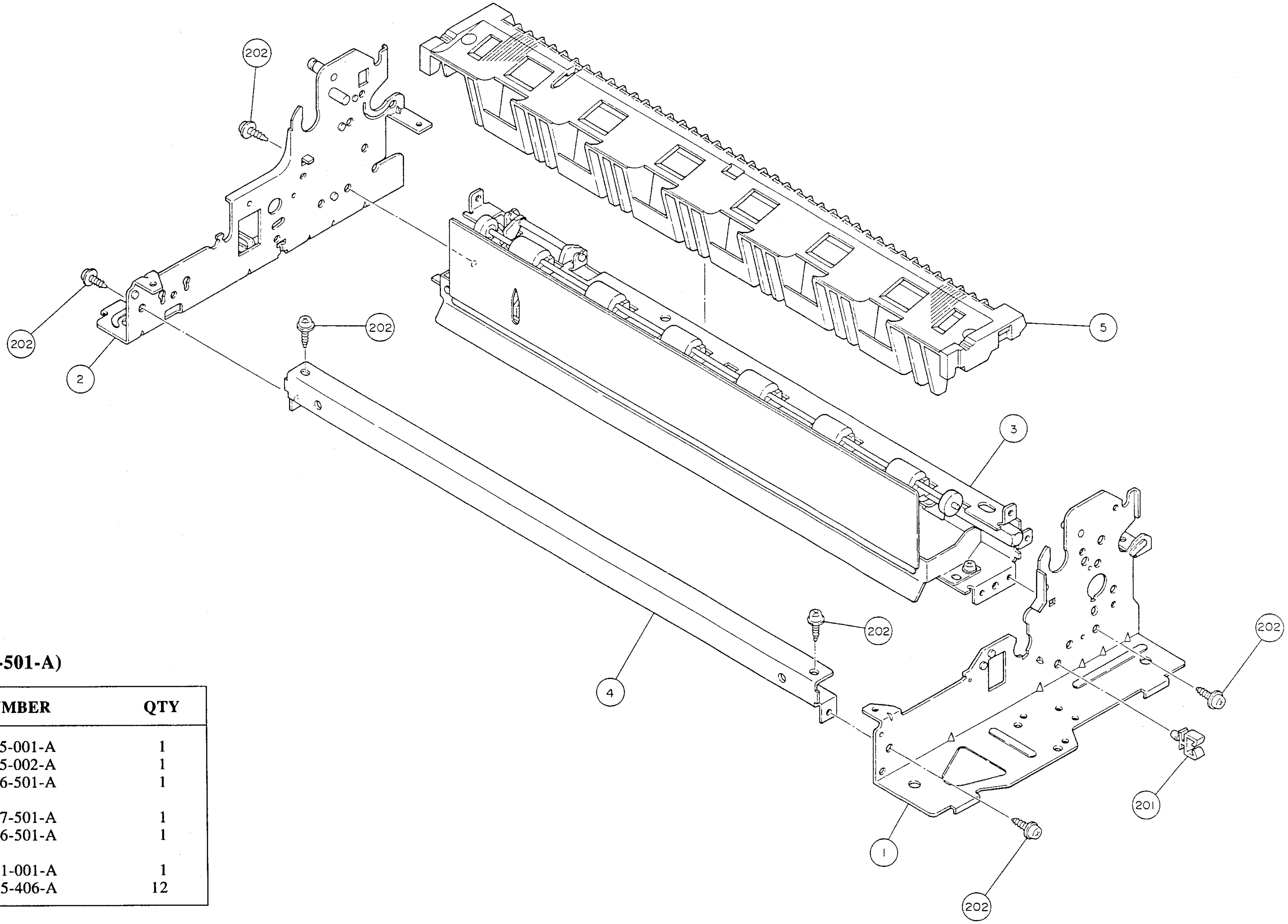


Figure 6-13 Frame Assembly (W)

Frame Assembly (W) (136-218457-501-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Right Side Frame Subassembly	136-846265-001-A	1
2	Left Side Frame Subassembly	136-846265-002-A	1
3	Main Stay Assembly (W) (See Figure 6-15 for breakdown)	136-218466-501-A	1
4	Front Stay (W)	136-846297-501-A	1
5	Paper Guide (W)	136-846286-501-A	1
201	Wire Saddle WS-1NS	808-811031-001-A	1
202	Screw, STCS-CPIMSx4x6x15BF	808-802445-406-A	12

Main Stay Assembly (N) (136-218466-001-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Main Stay (N)	136-846337-001-A	1
2	Rear Paper End Lever	136-846344-001-A	1
3	Bottom MDL Lever	136-846345-001-A	1
4	Roller Support	136-846339-001-A	4
5	Roller Support Spring	136-846306-001-A	4
6	Roller Support Bracket	136-846338-001-A	4
7	Release Shaft (N)	136-846340-001-A	1
8	Pressure Roller (N)	136-846341-001-A	1
9	Pressure Roller (F)	136-846342-001-A	4
10	Pressure Spring (N)	136-846406-001-A	4
11	Bottom Guide Assembly (N)	136-846277-001-A	1
201	Screw, STCS-CPIMSx4x6x15BF	808-802445-406-A	2

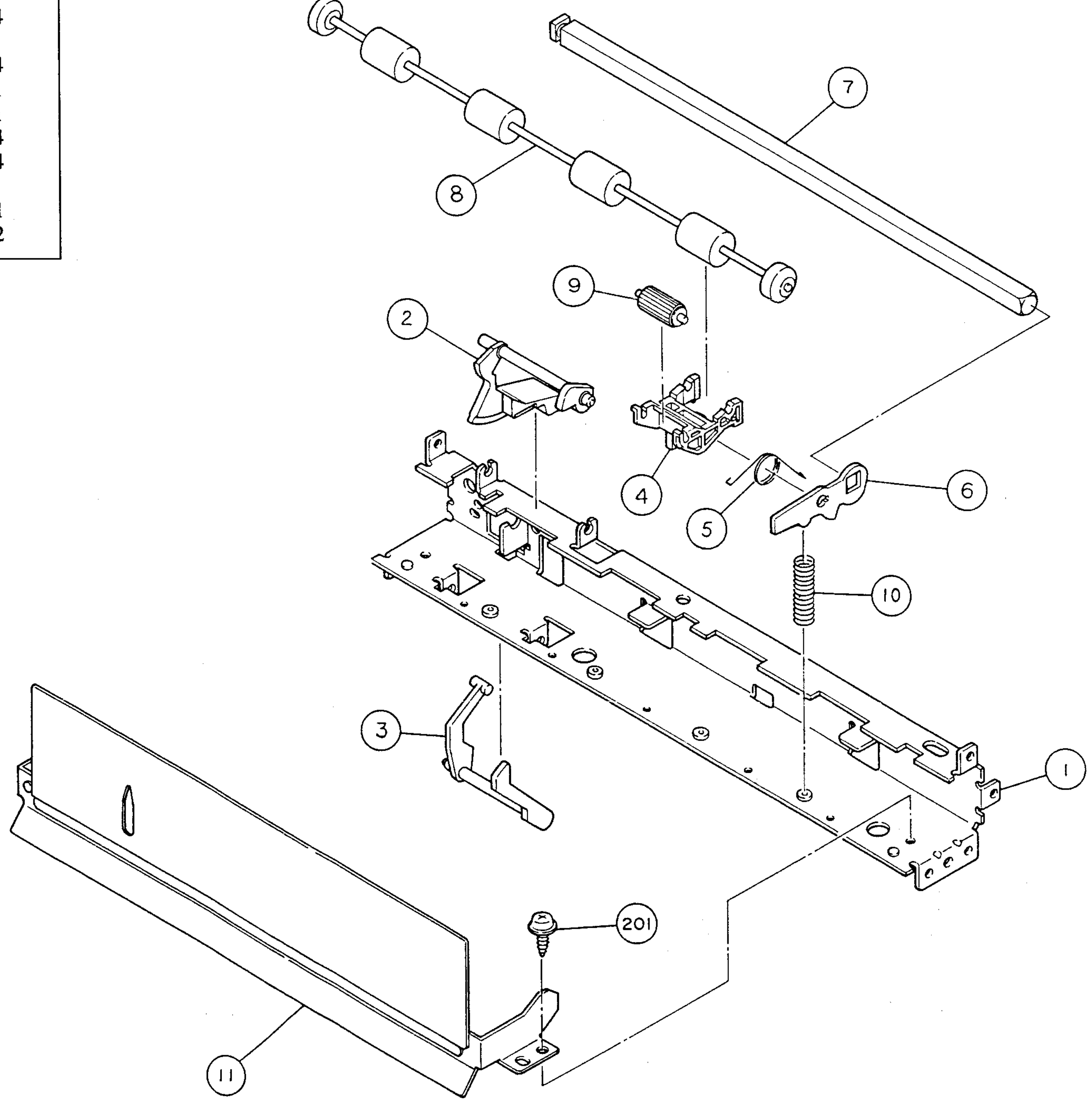


Figure 6-14 Main Stay Assembly (N)

Main Stay Assembly (W) (136-218466-501-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Main Stay (W)	136-846337-501-A	1
2	Rear Paper End Lever	136-846344-001-A	1
3	Bottom MDL Lever	136-846345-001-A	1
4	Roller Support	136-846339-001-A	6
5	Roller Support Spring	136-846306-001-A	6
6	Roller Support Bracket	136-846338-001-A	6
7	Release Shaft (W)	136-846340-501-A	1
8	Pressure Roller (W)	136-846341-501-A	1
9	Pressure Roller (F)	136-846342-001-A	6
10	Pressure Spring	136-846343-001-A	6
11	Bottom Guide Assembly (W)	136-846277-501-A	1
201	Screw, STCS-CPIMSx4x6x15BF	808-802445-406-A	2

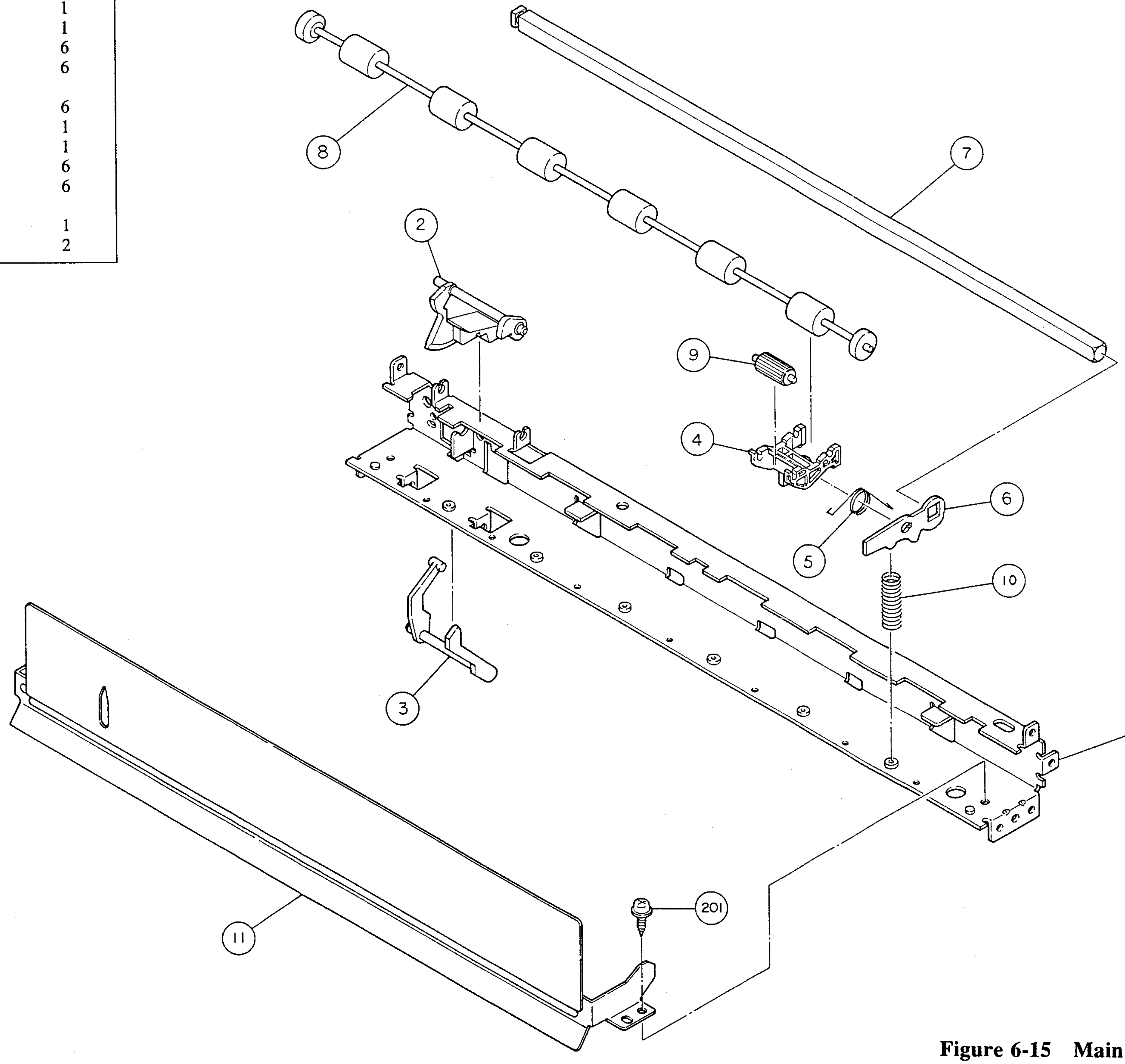


Figure 6-15 Main Stay Assembly (W)

Platen Assembly (N) (136-218461-001-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Platen (N)	136-846313-001-A	1
2	Platen Bushing (LH)	136-846314-001-A	1
3	Platen Bushing (RH)	136-846314-002-A	1
4	Platen Thrust Shim	136-768495-0	1
5	Option Drive Gear	136-846315-001-A	1
6	Paper Selection Lever	136-846316-001-A	1
7	Platen Gear	136-846317-001-A	1
8	Manual Feed Gear	136-846318-001-A	1
201	Spring Pin	803-010022-314-0	2

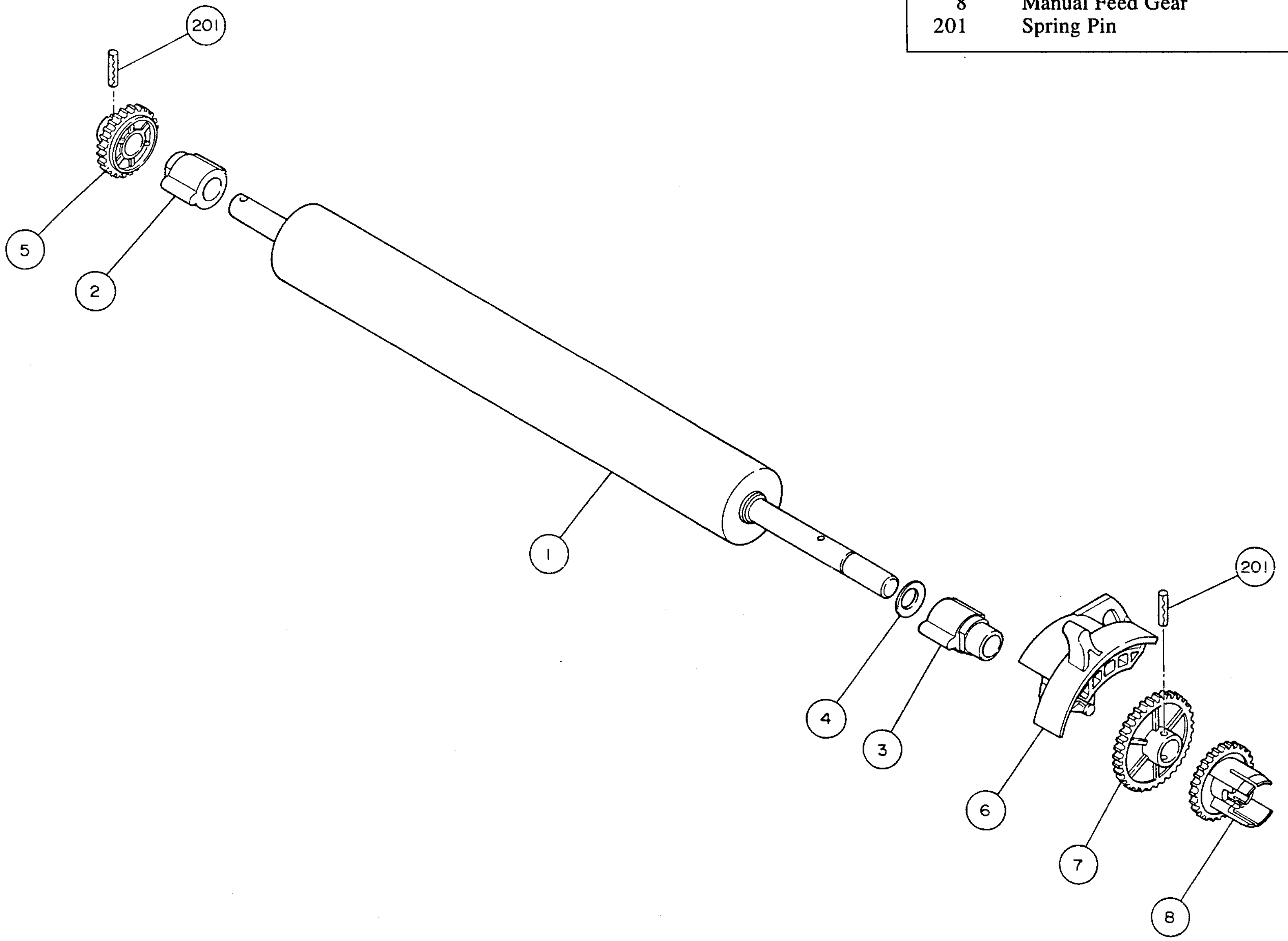


Figure 6-16 Platen Assembly (N)

Platen Assembly (W) (136-218461-501-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Platen (W)	136-846313-501-A	1
2	Platen Bushing (LH)	136-846314-001-A	1
3	Platen Bushing (RH)	136-846314-002-A	1
4	Platen Thrust Shim	136-768495-0	1
5	Option Drive Gear	136-846315-001-A	1
6	Paper Selection Lever	136-846316-001-A	1
7	Platen Gear	136-846317-001-A	1
8	Manual Feed Gear	136-846318-001-A	1
201	Spring Pin	803-010022-314-0	2

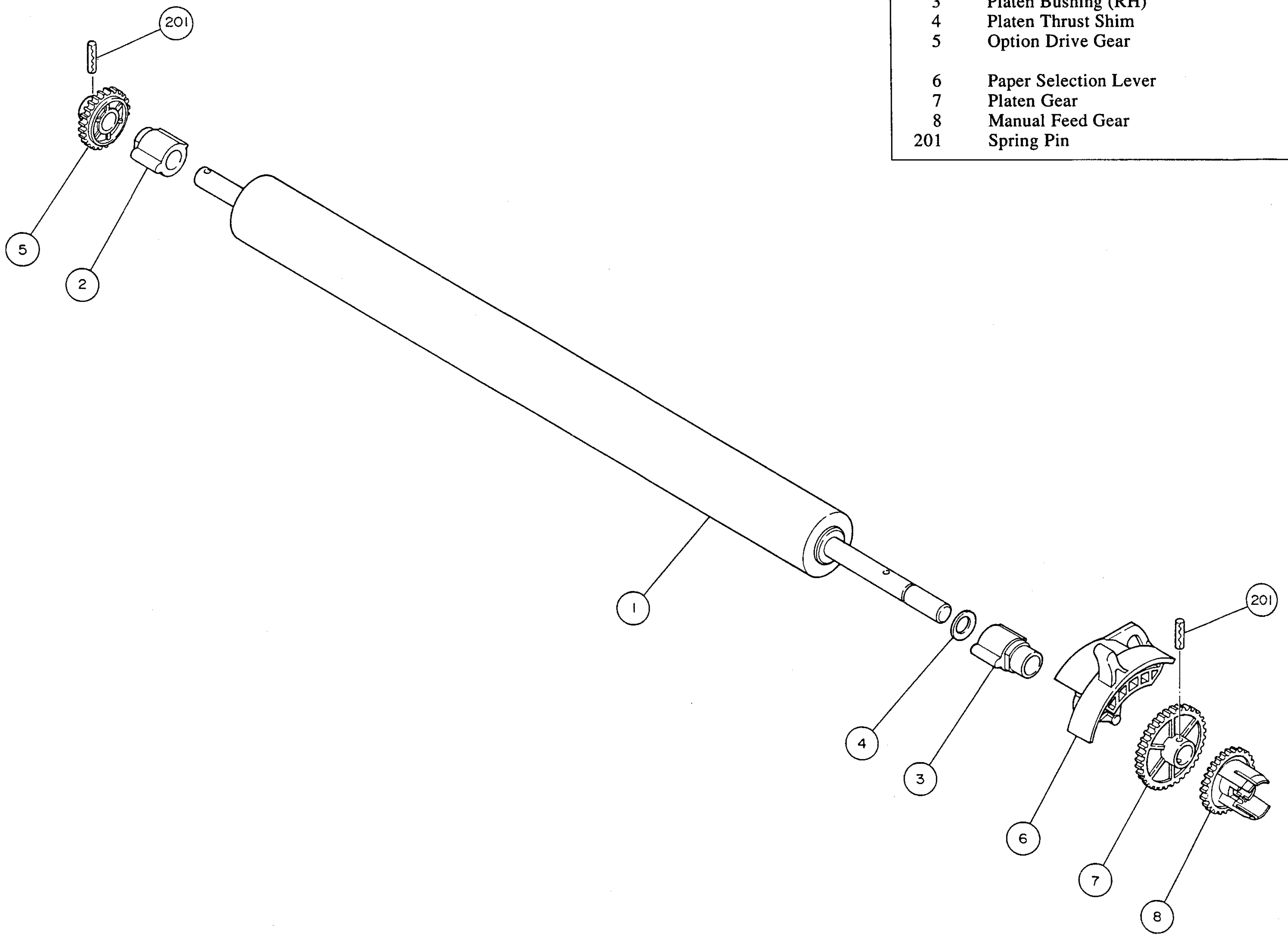


Figure 6-17 Platen Assembly (W)

Carrier Assembly (136-846266-GRP-A)

ITEM	PART NAME	PART NUMBER	QTY	
			001	501
1	Carrier Subassembly (N)	136-846278-001-A	1	—
1	Carrier Subassembly (W)	136-846278-501-A	—	1
1-1	Carrier Frame Subassembly	136-846267-001-A	1	1
1-2	Slide Set Piece	136-824597-001-B	1	1
1-3	Clamp Lever (LH)	136-846386-001-A	1	1
1-4	Clamp Lever (RH)	136-846386-002-A	1	1
1-5	Planetarium Gear	136-846358-001-A	2	2
1-6	Planetarium Arm Subassembly	136-854350-001-A	1	1
1-7	Ribbon Feed Pulley	136-846354-001-A	1	1
1-8	Ribbon Feed Wire (N) Assembly	808-812396-001-A	1	—
1-8	Ribbon Feed Wire (W) Assembly	808-812396-501-A	—	1
1-9	Pulley Case	136-846385-001-A	1	1
1-10	Counter Gear	136-846359-001-A	1	1
1-11	Ribbon Drive Gear	136-846360-001-A	1	1
1-12	Timing Belt (N)	808-812393-001-A	1	—
1-12	Timing Belt (W)	808-812393-501-A	—	1
1-13	Belt Holder	136-846361-001-A	1	1
1-14	Ribbon Sensor Assembly	808-820752-001-A	1	1
1-15	Photo Sensor Clamp Plate	136-824599-001-A	1	1
1-16	Carrier Frame Cover	136-846362-001-A	1	1
1-17	Carrier FG Spring (LH)	136-846367-001-A	1	1
1-18	Carrier FG Spring (RH)	136-846367-002-A	1	1
2	Card Holder Assembly	136-846275-001-A	1	1
2**	Card Holder Assembly (Std.)	136-846275-401-A	1	1
2-1*	Card Holder Subassembly	136-854348-001-A	1	1
2-1**	Card Holder Subassembly (Std.)	136-854348-401-A	1	1
2-2*	Card Holder Bracket	136-846364-001-A	1	1
2-2**	Card Holder Bracket (Std.)	136-846364-401-A	1	1
3	Piece (1)	136-846363-001-A	1	1
201	Screw, PL-CPIMSx3x8x15BF	805-300003-008-0	1	1

* Only use for P60/P70. This part is not contained in carrier assembly (136-846266-GRP-A).

** Only use for P6200/P6300. This part is not contained in carrier assembly (136-846266-GRP-A).

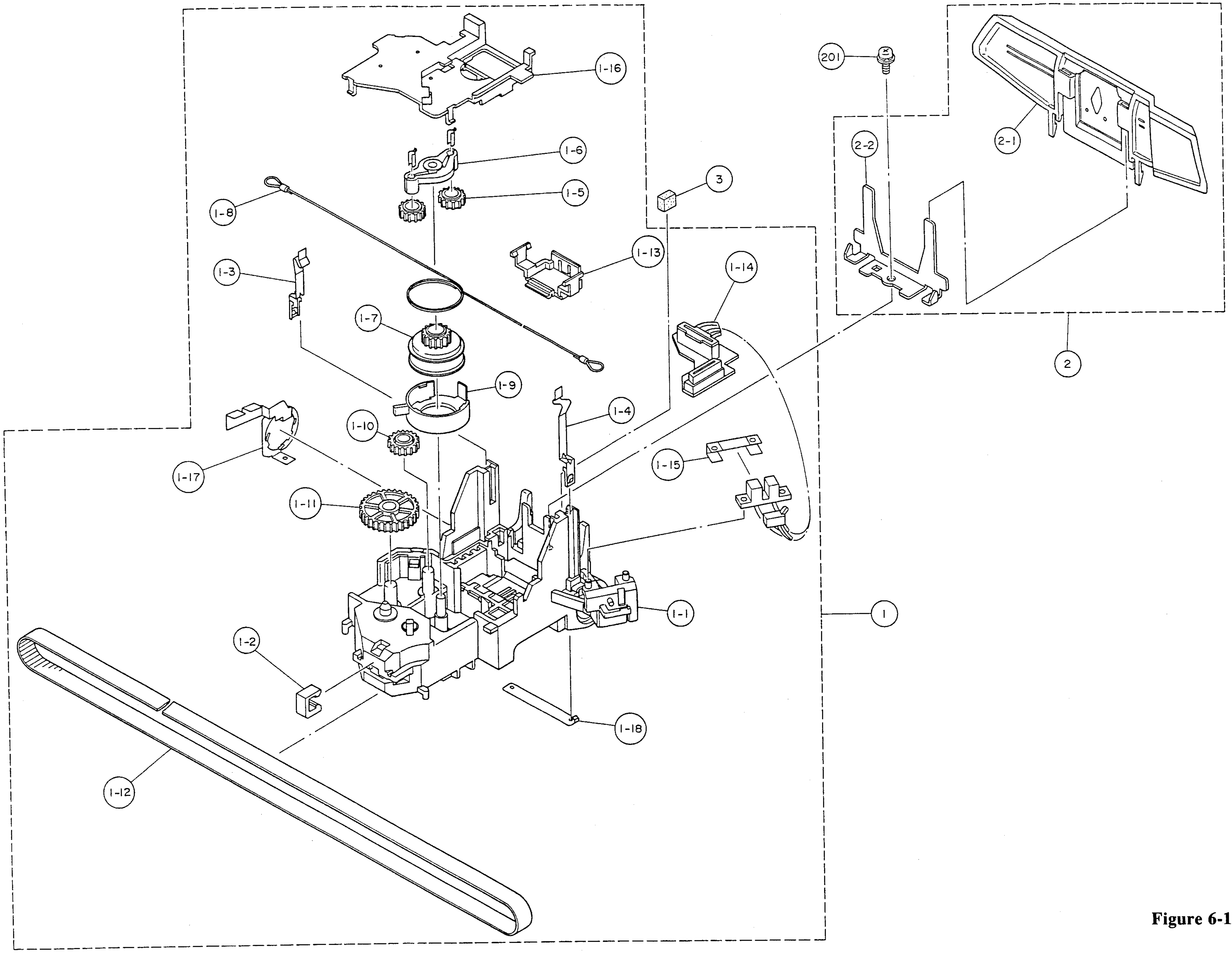

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Figure 6-18 Carrier Assembly

Tractor Unit (N) (136-218463-001-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Tractor Frame (N)	136-846319-001-A	1
2	Tractor Drive Shaft (N)	136-846320-001-A	1
3	Tractor Support Shaft (N)	136-846321-001-A	1
4	Tractor Assembly (L)	808-868140-012-A	1
5	Tractor Assembly (R)	808-868140-011-A	1
6	Tractor Bushing (LH)	136-846322-002-A	1
7	Tractor Bushing (RH)	136-846322-001-A	1
8	Center Guide	136-824533-001-A	1
9	Tractor Gear	136-846323-001-A	1
201	Special Retainer	136-854347-001-A	1

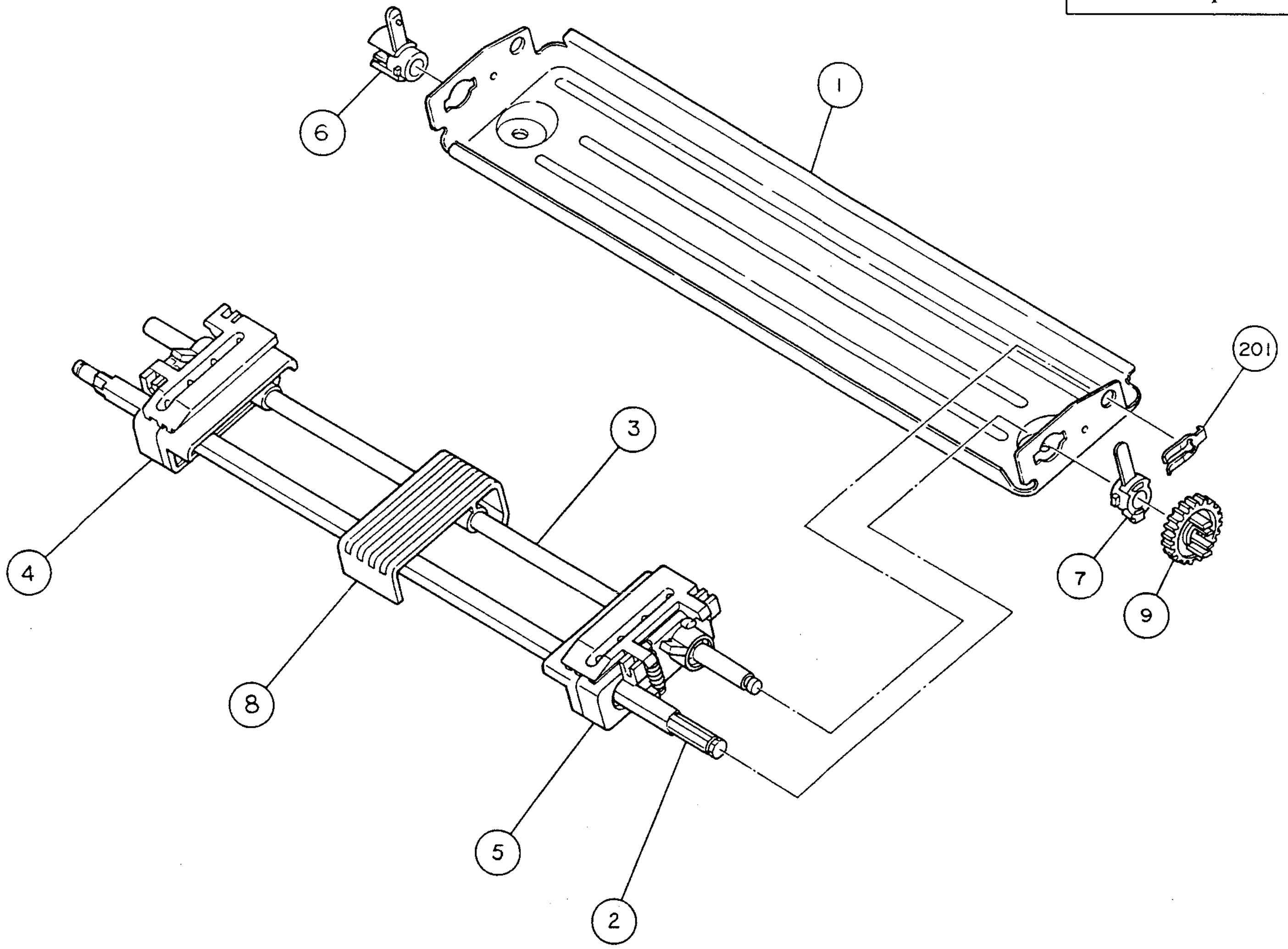


Figure 6-19 Tractor Unit (N)

Tractor Unit (W) (136-218463-501-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Tractor Frame (W)	136-846319-501-A	1
2	Tractor Drive Shaft (W)	136-846320-501-A	1
3	Tractor Support Shaft (W)	136-846321-501-A	1
4	Tractor Assembly (L)	808-868140-012-A	1
5	Tractor Assembly (R)	808-868140-011-A	1
6	Tractor Bushing (LH)	136-846322-002-A	1
7	Tractor Bushing (RH)	136-846322-001-A	1
8	Center Guide	136-824533-001-A	1
9	Tractor Gear	136-846323-001-A	1
201	Special Retainer.	136-854347-001-A	1

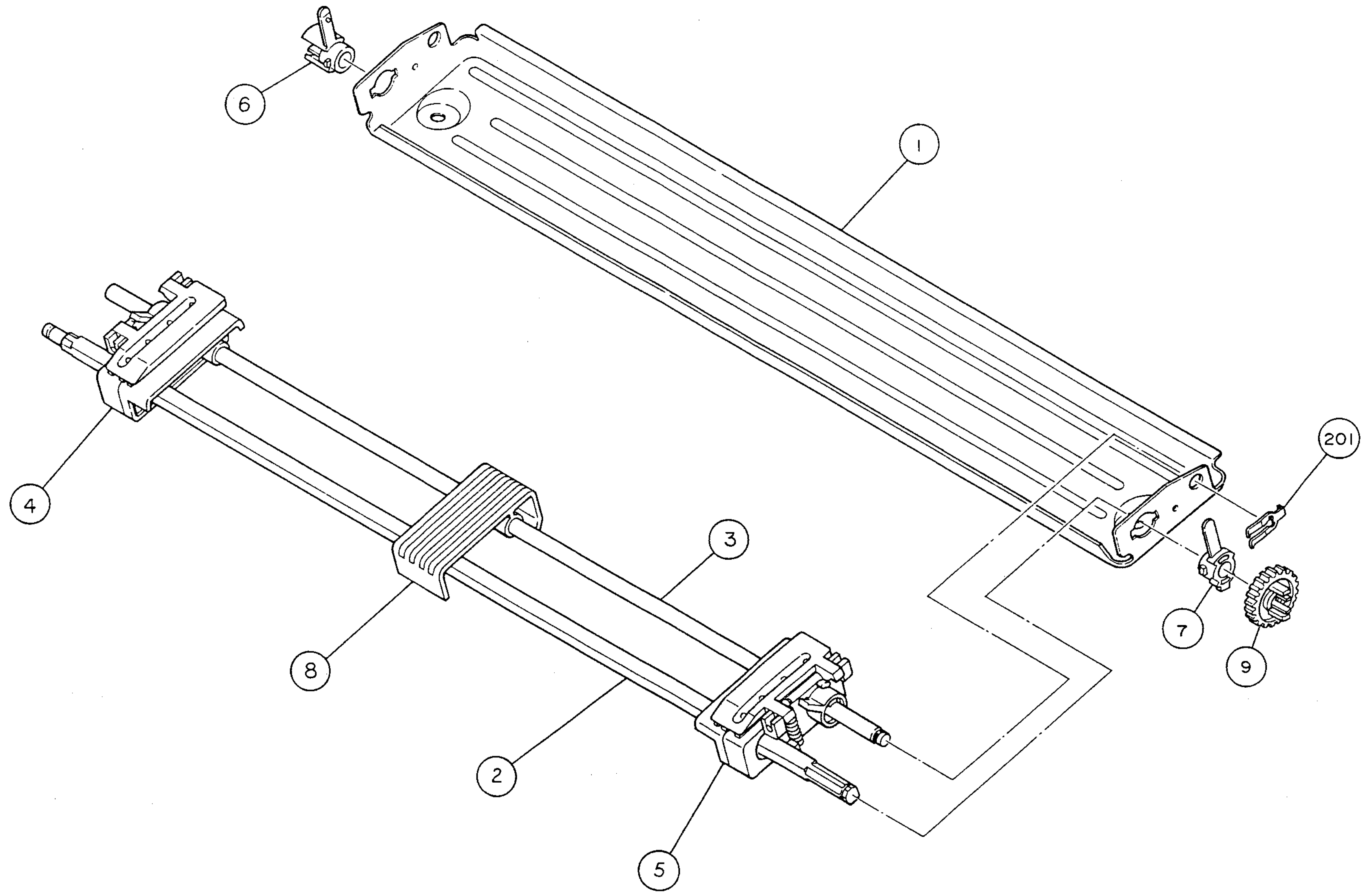


Figure 6-20 Tractor Unit (W)

Feed Roller Unit (N) (136-218464-001-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Feed Roller Frame Assembly (N)	136-846273-001-A	1
1-1	Feed Roller Frame (N)	136-846331-001-A	1
1-2	Friction MDL Lever (N)	136-846332-001-A	1
1-3	MDL Lever Bushing	136-846305-001-A	2
2	Feed Roller (N)	136-846326-001-A	1
3	Feed Roller Shaft Bushing	136-846328-001-A	2
4	Feed Roller Gear	136-846329-001-A	1
5	Feed Roller Cover (N)	136-846330-001-A	1
6	Bail Roller Guide Assembly (N)	136-218458-001-A	1
6-1	Bail Roller Guide (N)	136-846298-001-A	1
6-2	Support Shaft (N)	136-846368-001-A	1
6-3	Feed Assist Roller	136-846369-001-A	8
201	Special Screw	136-846304-001-A	2

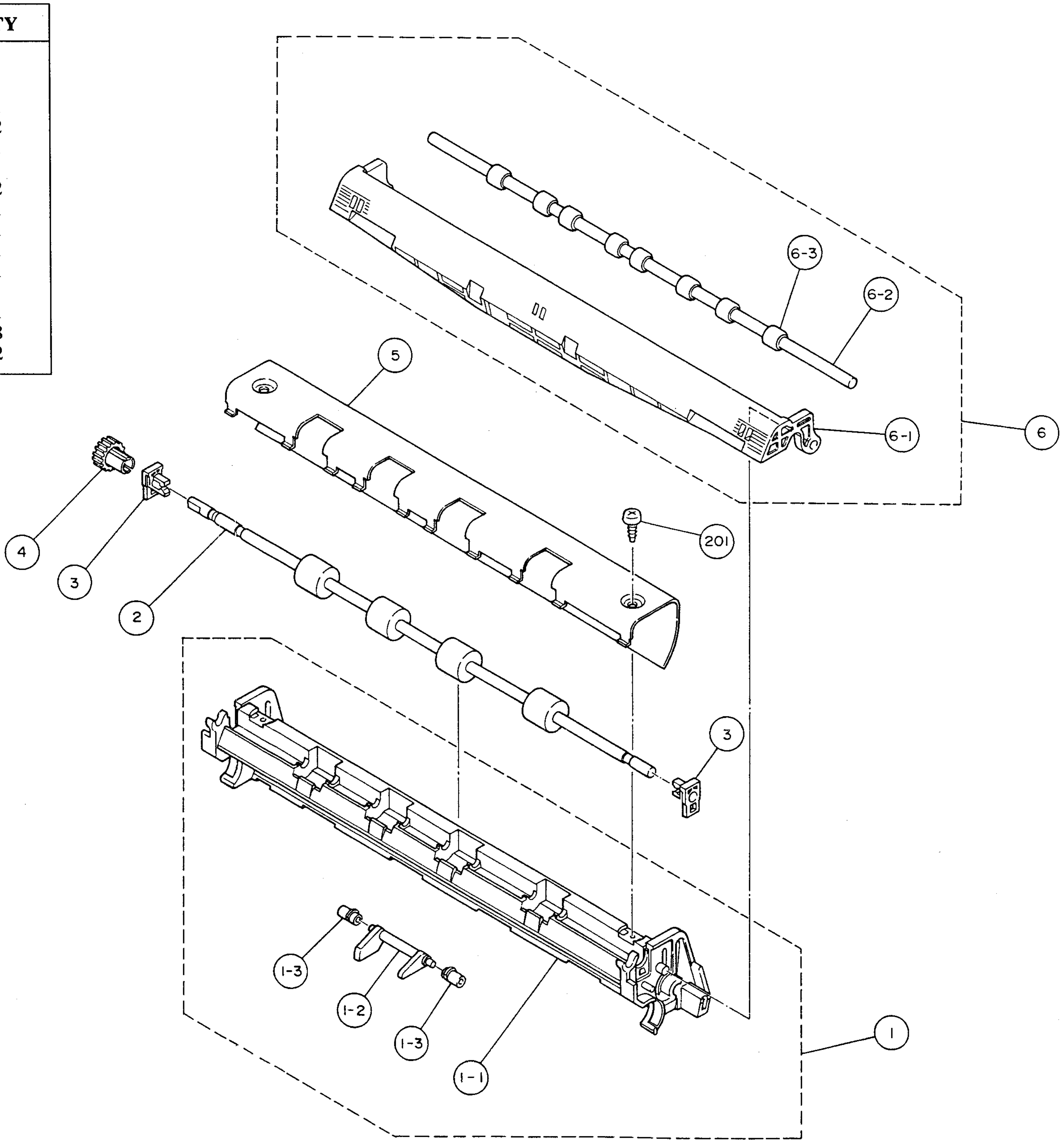


Figure 6-21 Feed Roller Unit (N)

Feed Roller Unit (W) (136-218464-501-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Feed Roller Frame Assembly (W)	136-846273-501-A	1
1-1	Feed Roller Frame (W)	136-846331-501-A	1
1-2	Friction MDL Lever (W)	136-846332-501-A	1
1-3	MDL Lever Bushing	136-846305-001-A	2
2	Feed Roller (W)	136-846326-501-A	1
3	Feed Roller Shaft Bushing	136-846328-001-A	2
4	Feed Roller Gear	136-846329-001-A	1
5	Feed Roller Cover (W)	136-846330-501-A	1
6	Bail Roller Guide Assembly (W)	136-218458-501-A	1
6-1	Bail Roller Guide (W)	136-846298-501-A	1
6-2	Support Shaft (W)	136-846368-501-A	1
6-3	Feed Assist Roller	136-846369-001-A	12
201	Special Screw	136-846304-001-A	2

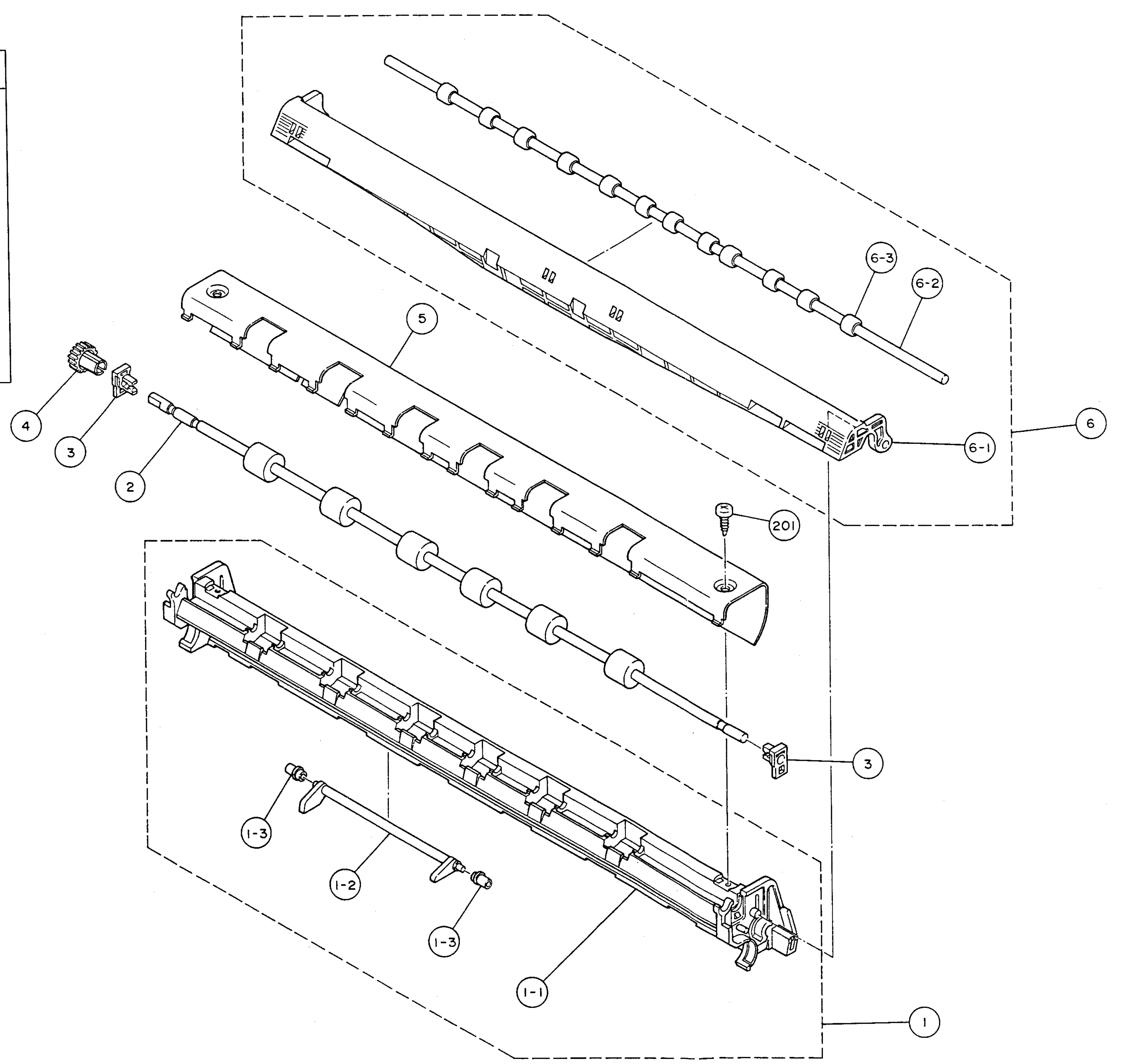


Figure 6-22 Feed Roller Unit (W)

Base Cover Assembly (N) (136-215363-001/-301/-401-A)

ITEM	PART NAME	PART NUMBER	QTY* 001	301	401
1	Base Cover Subassembly	136-217749-001-A	1	—	—
1	Base Cover Subassembly	136-217749-301-A	—	1	—
1	Base Cover Subassembly	136-217749-401-A	—	—	1
2	Base Chassis	136-843454-001-A	1	1	1
3	Frame Foot	136-835336-001-A	4	4	4
4	FG Plate	136-843459-001-A	4	4	4
5	Spacer	136-846883-001-A	2	2	2
6	Wire Saddle	808-811031-001-A	1	1	1
201	Screw, PL-CPIMSx3x6x15BF	805-300003-006-0	4	4	4
202	Screw, SL-CPIMSx4x12x15BF	805-310004-012-0	8	8	8
203	Tapping Screw	808-802044-408-0	8	8	8

* 001: P6200/P60 (Japan Production)
301: P60 (U.K. Production)
401: P6200 (U.S.A. Production)

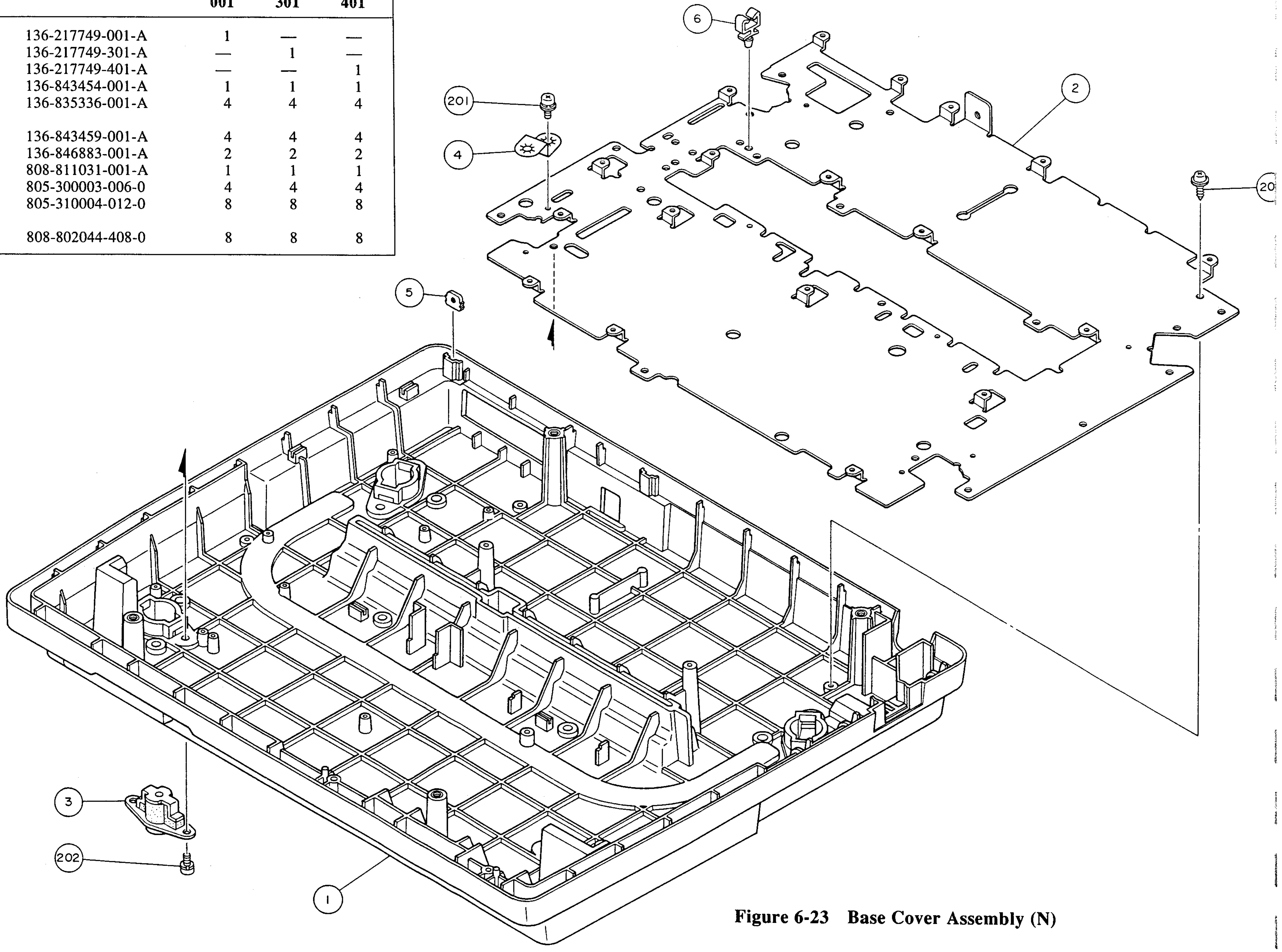


Figure 6-23 Base Cover Assembly (N)

Base Cover Assembly (W) (136-215363-501/-801/-901-A)

ITEM	PART NAME	PART NUMBER	QTY*		
			501	801	901
1	Base Cover Subassembly	136-217749-501-A	1	—	—
1	Base Cover Subassembly	136-217749-801-A	—	1	—
1	Base Cover Subassembly	136-217749-901-A	—	—	1
2	Base Chassis	136-843455-501-A	1	1	1
3	Frame Foot	136-835336-001-A	4	4	4
4	FG Plate	136-843459-001-A	4	4	4
5	Spacer	136-846883-001-A	2	2	2
6	Wire Saddle	808-811031-001-A	1	1	1
201	Screw, PL-CPIMSx3x6x15BF	805-300003-006-0	4	4	4
202	Screw, SL-CPIMSx4x12x15BF	805-310004-012-0	8	8	8
203	Tapping Screw	808-802044-408-0	8	8	8

* 501: P6300/P70 (Japan Production)
801: P70 (U.K. Production)
901: P6300 (U.S.A. Production)

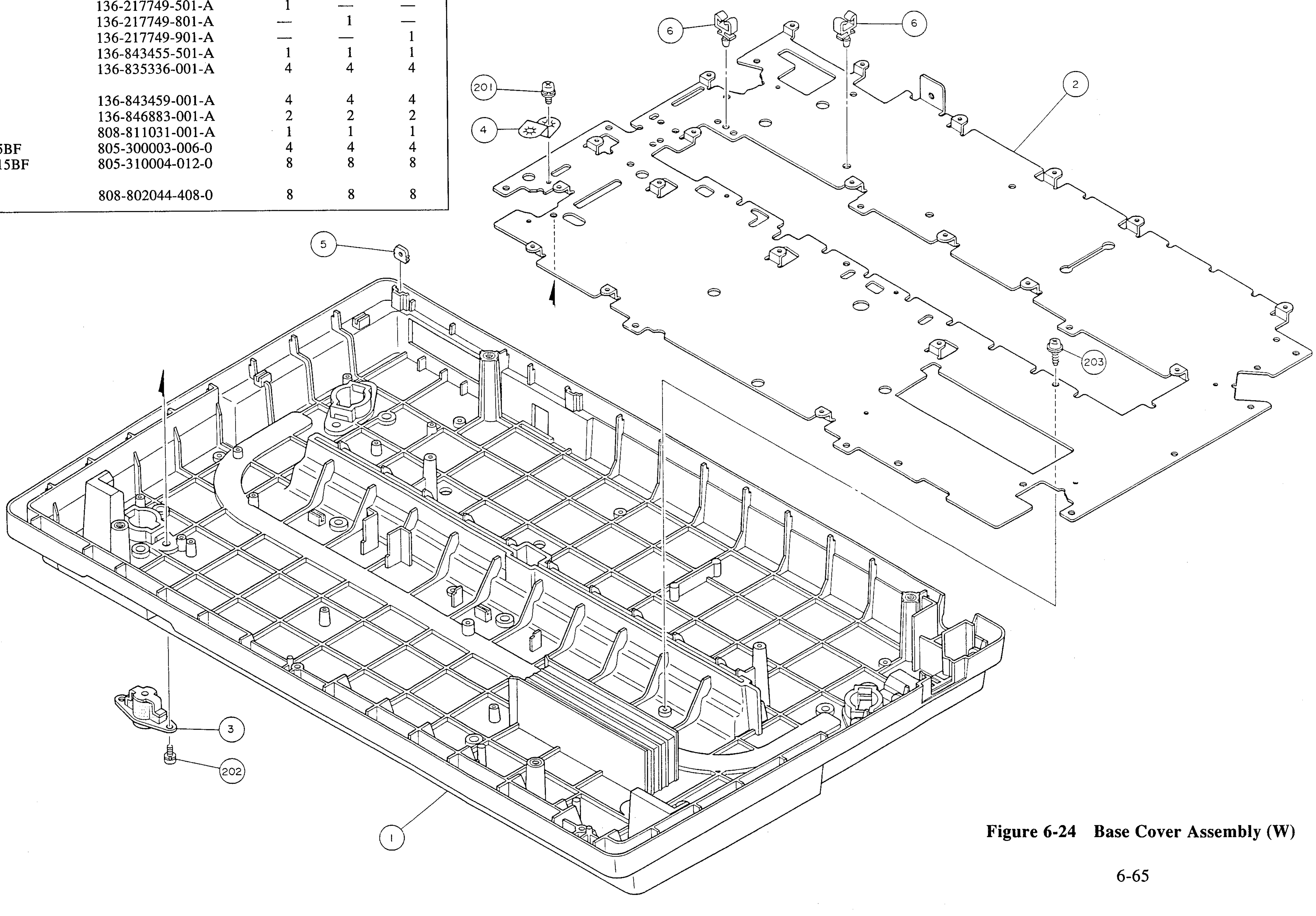


Figure 6-24 Base Cover Assembly (W)

Upper Cover Assembly (N) (136-215358-001/-301/-401-A)

ITEM	PART NAME	PART NUMBER	QTY* 001	301	401
1	Middle Cover Assembly	136-215359-001-A	1	—	—
1	Middle Cover Assembly	136-215359-301-A	—	1	—
1	Middle Cover Assembly	136-215359-401-A	—	—	1
1-1	Middle Cover (S)	136-843467-001-A	1	—	—
1-1	Middle Cover (S)	136-843467-301-A	—	1	—
1-1	Middle Cover (S)	136-846467-401-A	—	—	1
1-2	Special Screw	808-814333-A	4	4	4
2	Top Cover Assembly	136-215360-001-A	1	—	—
2	Top Cover Assembly	136-215360-301-A	—	1	—
2	Top Cover Assembly	136-215360-401-A	—	—	1
2-1	Top Cover Subassembly	136-217747-001-A	1	—	—
2-1	Top Cover Subassembly	136-217747-301-A	—	1	—
2-1	Top Cover Subassembly	136-217747-401-A	—	—	1
2-2	Canopy (S)	136-846412-001-A	1	—	—
2-2	Canopy (S)	136-846412-301-A	—	1	—
2-2	Canopy (S)	136-846412-401-A	—	—	1
3	Rear Cover Assembly	136-218953-001-A	1	—	—
3	Rear Cover Assembly	136-218953-301-A	—	1	—
3	Rear Cover Assembly	136-218953-401-A	—	—	1
3-1	Rear Cover (S)	136-846414-001-A	1	—	—
3-1	Rear Cover (S)	136-846414-301-A	—	1	—
3-1	Rear Cover (S)	136-846414-401-A	—	—	1
3-2	Separator	136-846880-001-A	1	—	—
3-2	Separator	136-846880-301-A	—	1	—
3-2	Separator	136-846880-401-A	—	—	1
3-201	Tapping Screw	808-802044-408-0	2	2	2

* 001: P6200/P60 (Japan Production)
301: P60 (U.K. Production)
401: P6200 (U.S.A. Production)

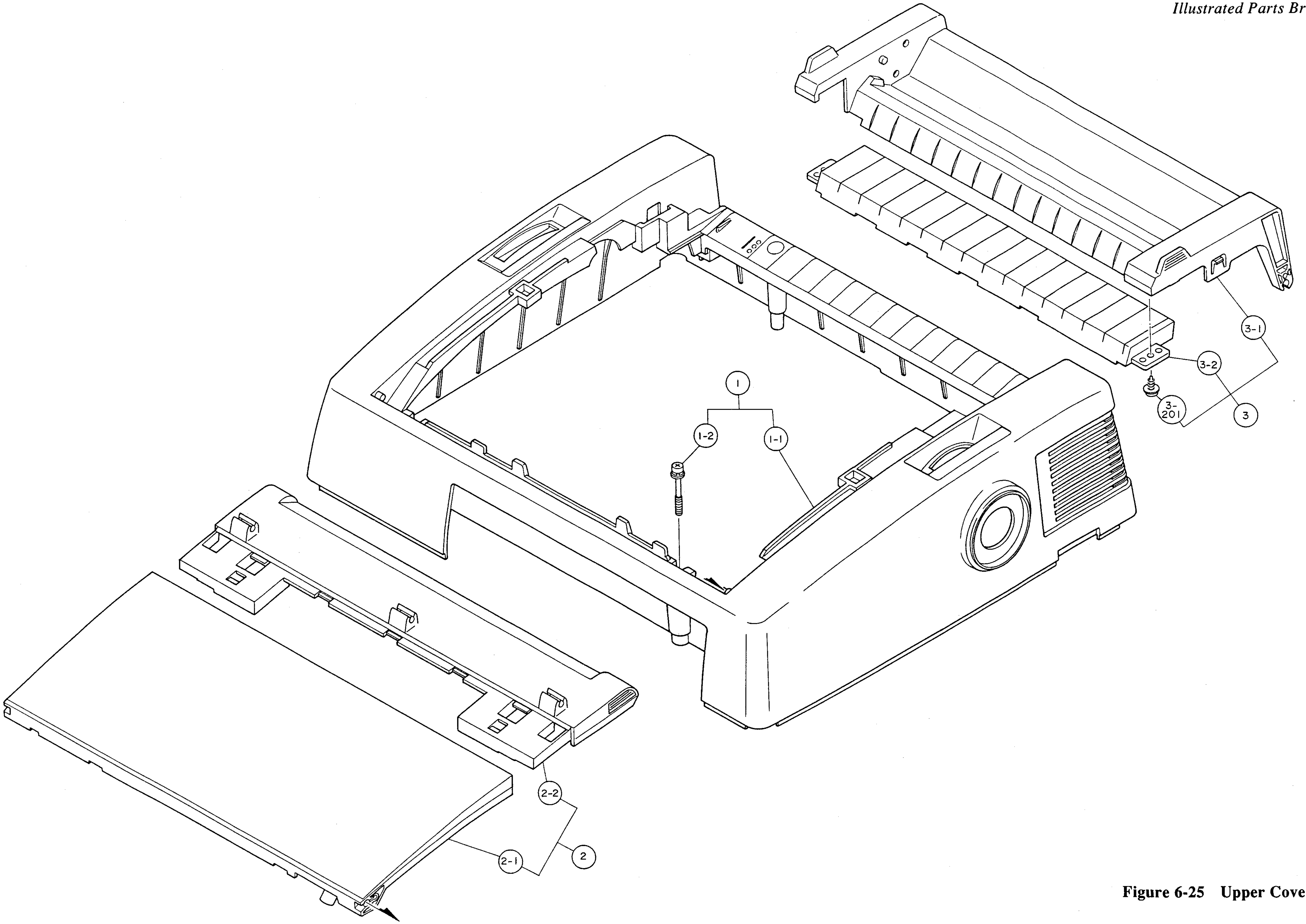

3-1
3-2
3-201
3
1
1-2
1-1
2-2
2
2-1

Figure 6-25 Upper Cover Assembly (N)

Upper Cover Assembly (W) (136-215358-501/-801/-901-A)

ITEM	PART NAME	PART NUMBER	QTY*		
			501	801	901
1	Middle Cover Assembly	136-215359-501-A	1	—	—
1	Middle Cover Assembly	136-215359-801-A	—	1	—
1	Middle Cover Assembly	136-215359-901-A	—	—	1
1-1	Middle Cover (L)	136-843409-501-A	1	—	—
1-1	Middle Cover (L)	136-843409-801-A	—	1	—
1-1	Middle Cover (L)	136-846409-901-A	—	—	1
1-2	Special Screw	808-814333-A	4	4	4
2	Top Cover Assembly	136-215360-501-A	1	—	—
2	Top Cover Assembly	136-215360-801-A	—	1	—
2	Top Cover Assembly	136-215360-901-A	—	—	1
2-1	Top Cover Subassembly	136-217747-501-A	1	—	—
2-1	Top Cover Subassembly	136-217747-801-A	—	1	—
2-1	Top Cover Subassembly	136-217747-901-A	—	—	1
2-2	Canopy (L)	136-846413-501-A	1	—	—
2-2	Canopy (L)	136-846413-801-A	—	1	—
2-2	Canopy (L)	136-846413-901-A	—	—	1
3	Rear Cover Assembly	136-218953-501-A	1	—	—
3	Rear Cover Assembly	136-218953-801-A	—	1	—
3	Rear Cover Assembly	136-218953-901-A	—	—	1
3-1	Rear Cover (L)	136-846415-501-A	1	—	—
3-1	Rear Cover (L)	136-846415-801-A	—	1	—
3-1	Rear Cover (L)	136-846415-901-A	—	—	1
3-2	Separator	136-846881-501-A	1	—	—
3-2	Separator	136-846881-801-A	—	1	—
3-2	Separator	136-846881-901-A	—	—	1
3-201	Tapping Screw	808-802044-408-0	2	2	2

* 501: P6300/P70 (Japan Production)
801: P60 (U.K. Production)
901: P6200 (U.S.A. Production)

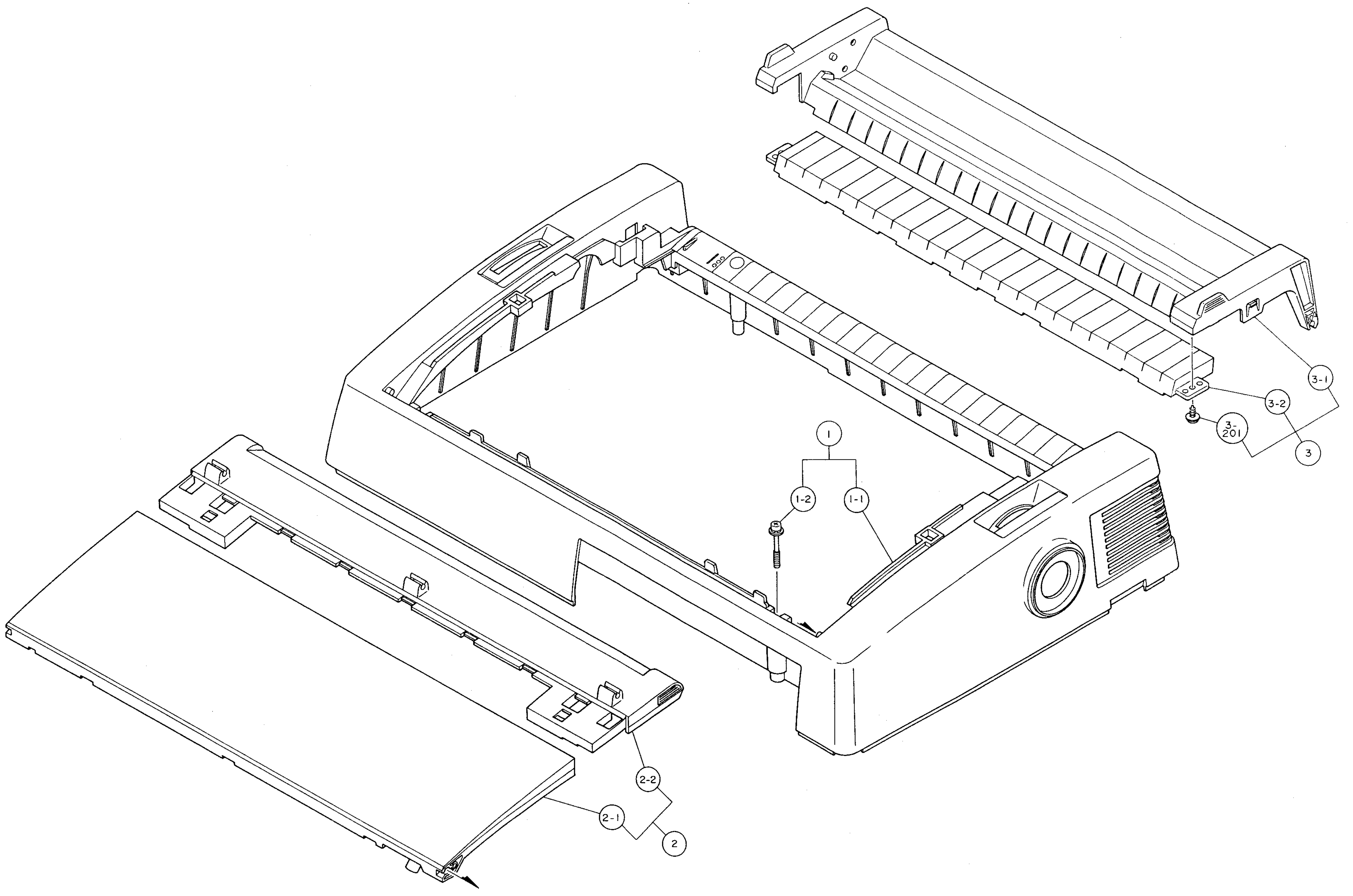

1
1-1
1-2
2
2-1
2-2
3
3-1
3-2
3-201

Figure 6-26 Upper Cover Assembly (W)

PSD Operator Panel (808-818170-301-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Operator Panel	136-846432-301-A	1
2	Operator Panel Sheet	136-846425-301-A	1
3	Operator Panel PCB Assembly	808-818170-602-A	1
4	Core Assembly	136-789708-001-A	1
201	Screw, #2CPTSx2.6x6x15BF	805-060026-006-0	7

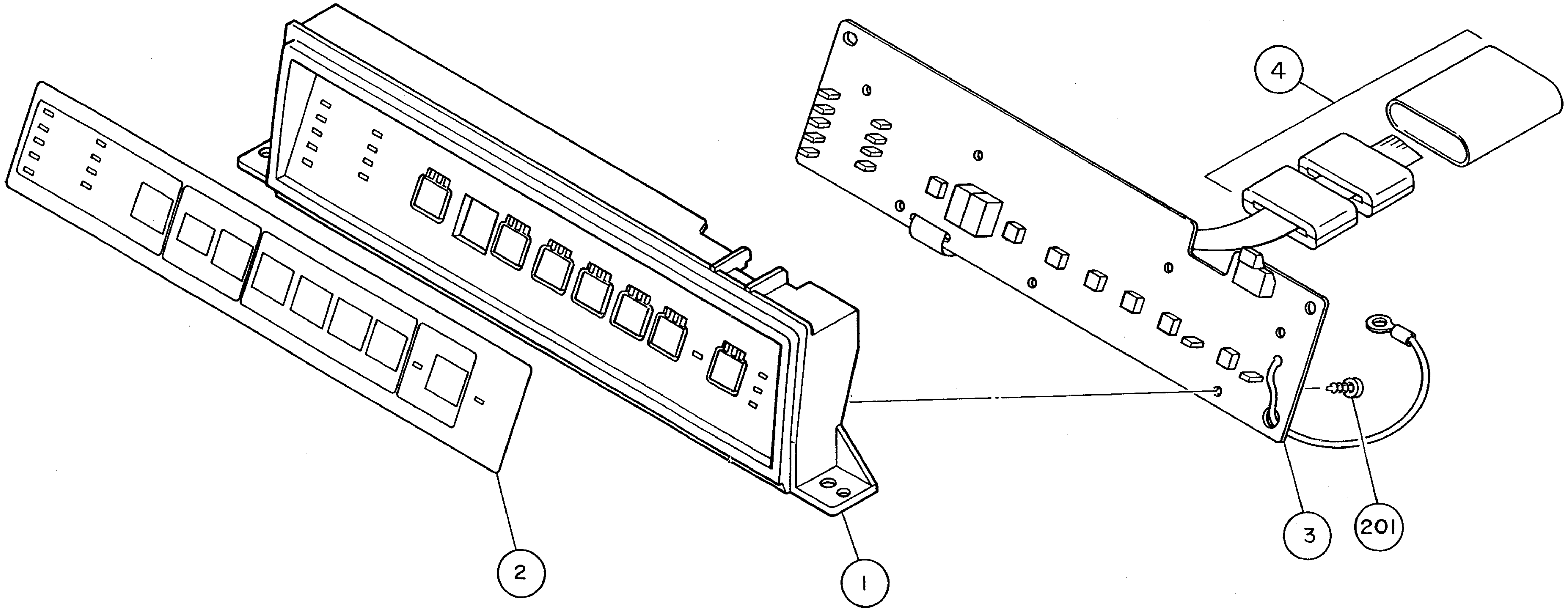


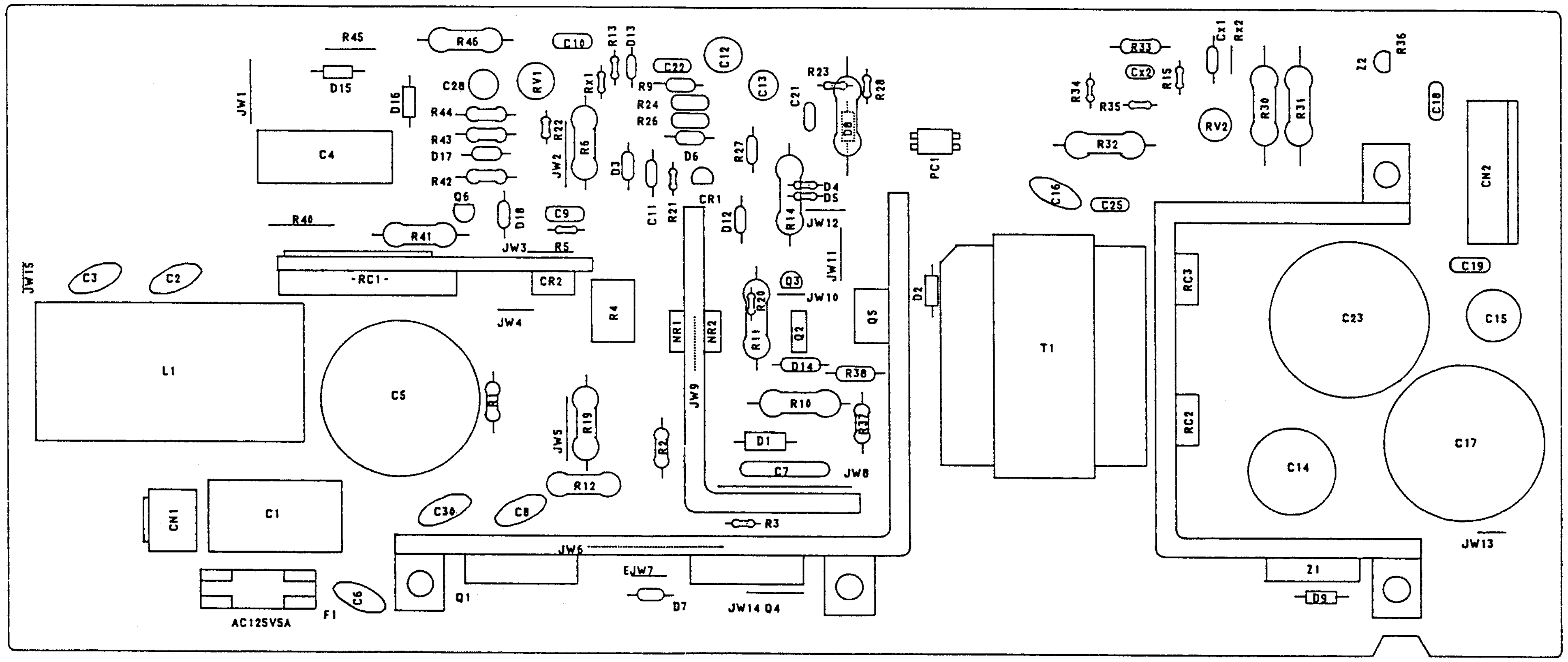
Figure 6-27 PSD Operator Panel

PSD Power (B) Assembly (808-891104-002-A) -1/2

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
R6	RM 1 W 33 Ω	808-891208-001-A	1
R8	RM 3 W 22 Ω	808-891208-002-A	1
R10	RM 2 W 15 kΩ	808-891208-201-A	1
R11	RM 3 W 15 kΩ	808-891208-202-A	1
R12	RM 3 W 68 Ω	808-891208-203-A	1
R14	RM 3 W 4.7 Ω	808-891208-003-A	1
R19	RM 2 W 0.47 Ω	808-891208-204-A	1
R27	RM 1/2 W 22 Ω	808-891208-004-A	1
R28	RM 1/2 W 1.5 Ω	808-891208-005-A	1
R30, R31	RM 3 W 1.5 kΩ	808-891208-006-A	2
R32	RM 3 W 15 Ω	808-891208-007-A	1
R33	RM 2 W 1 kΩ	808-891208-008-A	1
R41	RM 2 W 47 kΩ	808-891208-009-A	1
R46	RM 2 W 33 kΩ	808-891208-010-A	1
R1	RC 1/4 W 150 kΩ	808-891208-206-A	1
R2, R3, R37, R38	RC 1/4 W 68 kΩ	808-891208-207-A	4
R9	RC 1/4 W 6.8 kΩ	808-891208-017-A	1
R15	RC 1/4 W 4.7 kΩ	808-891208-018-A	1
R22	RC 1/4 W 150 Ω	808-891208-209-A	1
R23	RC 1/4 W 220 Ω	808-891208-210-A	1
R24	RC 1/4 W 1 kΩ	808-891208-016-A	1
R26	RC 1/4 W 27 Ω	808-891208-015-A	1
R42	RC 1/4 W 2.2 kΩ	808-891208-012-A	1
R43	RC 1/4 W 3.3 kΩ	808-891208-013-A	1
R5, R13, R20, R21, R34	RC 1/4 W 1 kΩ	808-891208-014-A	5
R35	RC 1/4 W 10 kΩ	808-891208-019-A	1
R36	RC 1/4 W 1.2 kΩ	808-891208-020-A	1
R44	RC 1/4 W 15 kΩ	808-891208-208-A	1
RX1	RC 1/4 W 1 kΩ	808-891208-014-A	1
RX2	RC 1/4 W 0 kΩ	808-891208-011-A	1
RV1	RV 200 Ω	808-891208-021-A	1
RV2	RV 2 kΩ	808-891208-022-A	1
R4	RS 5 W 10 Ω	808-891208-211-A	1
C5	CE 200 V 1000 μF	808-891208-212-A	1
C12	CE 25 V 220 μF	808-891208-023-A	1
C13	CE 63 V 22 μF	808-891208-025-A	1
C14	CE 16 V 4700 μF	808-891208-026-A	1
C15	CE 10 V 1000 μF	808-891208-027-A	1
C28	CE 50 V 22 μF	808-891208-024-A	1
C17, C23	CE 40 V 10000 μF	808-891208-028-A	2

PSD Power (B) Assembly (808-891104-002-A) -2/2

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
CX1	CF 50 V 1000 μF	808-891208-029-A	1
CX2	CF 50 V 0.22 μF	808-891208-034-A	1
C9, C10, C22	CF 50 V 0.1 μF	808-891208-030-A	3
C18, C19	CF 50 V 0.1 μF	808-891208-031-A	2
C21	CF 50 V 0.01 μF	808-891208-032-A	1
C25	CF 630 V 2200 μF	808-891208-033-A	1
C1	CF 250 Vac 0.22 μF	808-891208-035-A	1
C4	CF 250 Vac 0.1μF	808-891208-213-A	1
C7	CF 250 V 0.33 μF	808-891208-214-A	1
C11	CF 50 V 0.022 μF	808-891208-036-A	1
C2, C3, C6	CC 400/250/125 Vac 4700 pF	808-891208-215-A	3
C8	CC 2 kV 470 pF	808-891208-216-A	1
C16	CC 250 Vac 4700 pF	808-891208-037-A	1
C30	CC 400/250/125 Vac 2200 pF	808-891208-038-A	1
D2, D9, D15, D16	DG 600 V 1 A	808-891208-039-A	4
D4, D5, D7	DG 50 V 400 mA	808-891208-040-A	3
D12, D14, D18	DG 50 V 300 mA	808-891208-042-A	3
D13	DG 50 V 300 mA	808-891208-043-A	1
D8	DS 40 V 1 A	808-891208-041-A	1
D3	DZ 18 V 500 mW	808-891208-218-A	1
D17	DZ 6.8 V 500 mW	808-891208-219-A	1
D1	DF 1000 V 1 A	808-891208-217-A	1
D6	DZ 12 V 500 mW	808-891208-044-A	1
NR1, NR2	VR 140 V	808-891208-220-A	2
Q1, Q4	TRN 450 V 12 A	808-891208-221-A	2
Q2	TRP 60 V 6 A	808-891208-045-A	1
Q3	TRN 40 V 2 A	808-891208-047-A	1
Q5	TRN 50 V 10 A	808-891208-046-A	1
Q6	TRN 50 V 50 mA	808-891208-048-A	1
Z1	IC SI-3052V	808-891208-049-A	1
Z2	IC HA17431PA	808-891208-050-A	1
RC1	DB 400 V 6 A	808-891208-225-A	1
RC2	DSCK 40 V 5 A	808-891208-051-A	1
RC3	DFCK 200 V 10 A	808-891208-052-A	1
CN1	B2P3-VH	808-891208-053-A	1
CN2	B6P-VR	808-891208-054-A	1
CR1	SCR 200 V 300 mA	808-891208-222-A	1
CR2	TRI 400 V 10 A	808-891208-223-A	1
PC1	PC	808-891208-224-A	1
L1	ELF 18D850C	808-891208-226-A	1
T1	CX47038-259	808-891208-227-A	1
F1	FF 125 V 5 A	808-891208-228-A	1


R45
D15
R46
C10
R13
D13
C22
C12
R23
R28
R33
Cx1
Rx2
Z2
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C28
RV1
Rx1
R9
R24
R26
C13
C21
D8
Cx2
R34
R35
R15
R30
R31
C18
D16
R44
R43
D17
R42
Q6
D18
R22
JW2
R6
D3
D6
R27
PC1
R32
RV2
CN2
C4
C9
JW3
R5
C11
R21
CR1
D12
R14
D4
D5
JW12
C16
C25
R40
R41
JW11
JW15
C3
C2
-RC1-
CR2
R4
Q3
JW10
D2
T1
RC3
C23
C19
C15
JW4
NR1
NR2
R20
R11
Q2
Q5
D14
R38
L1
C5
R1
R19
JW9
R10
R37
RC2
C14
C17
JW5
R2
D1
C7
JW8
R12
CN1
C1
C30
C8
R3
JW6
JW13
Z1
D9
EJW7
C6
Q1
D7
JW14
Q4
AC125V5A
F1

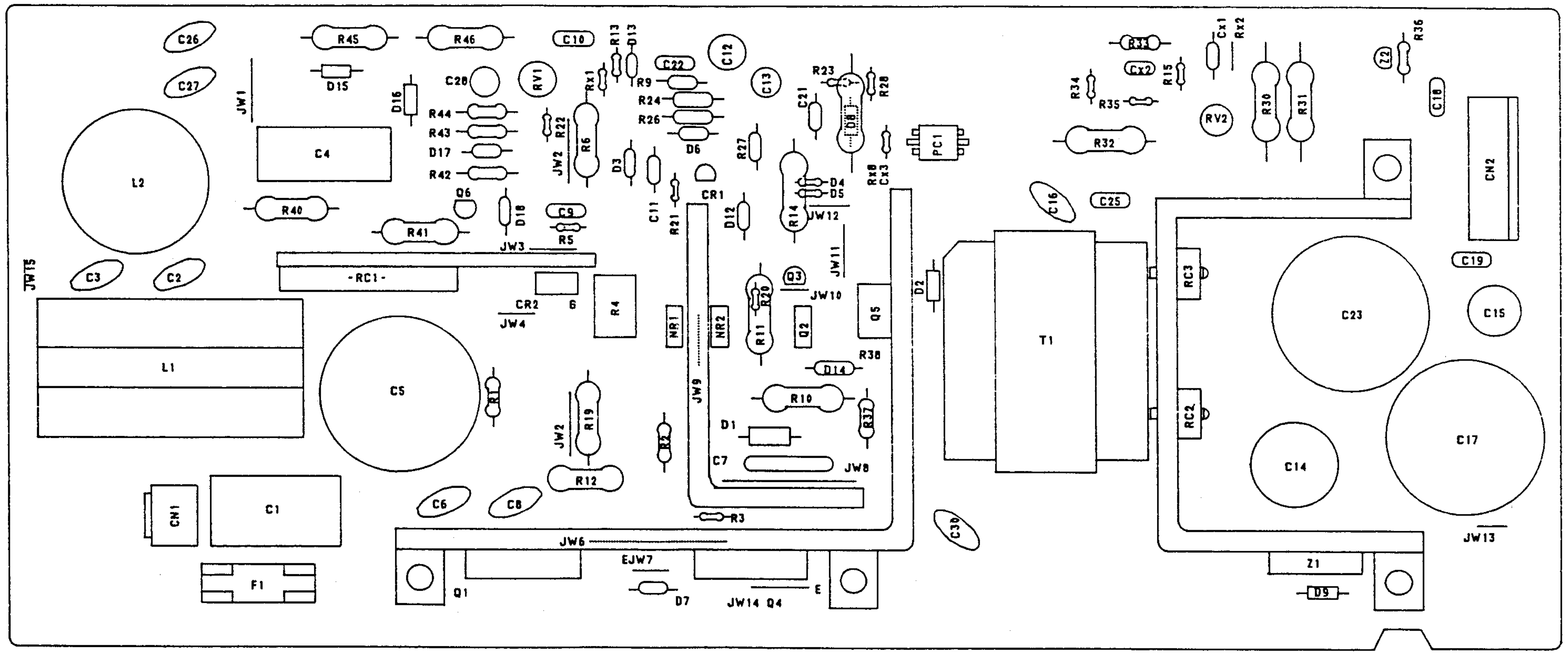
Figure 6-28 PSD Power (B) Assy (808-891104-002-A)

PSD Power (C) Assembly (808-891104-003-A) -1/2

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
R2, R3, R37, R38	RM 1 W 150 kΩ	808-891208-301-A	4
R6	RM 1 W 33 Ω	808-891208-001-A	1
R8	RM 3 W 22 Ω	808-891208-002-A	1
R10	RM 2 W 22 kΩ	808-891208-305-A	1
R11	RM 3 W 47 kΩ	808-891208-302-A	1
R12	RM 3 W 150 Ω	808-891208-303-A	1
R14	RM 3 W 4.7 Ω	808-891208-003-A	1
R19	RM 2 W 1 Ω	808-891208-304-A	1
R27	RM 1/2 W 22 Ω	808-891208-004-A	1
R28	RM 1/2 W 1.5 Ω	808-891208-005-A	1
R30, R31	RM 3 W 1.5 kΩ	808-891208-006-A	2
R32	RM 3 W 15 Ω	808-891208-007-A	1
R33	RM 2 W 1 kΩ	808-891208-008-A	1
R40, R41	RM 2 W 47 kΩ	808-891208-009-A	2
R45, R46	RM 2 W 33 kΩ	808-891208-010-A	2
RX1	RC 1/4 W 1 kΩ	808-891208-014-A	1
RX2	RC 1/4 W 0 kΩ	808-891208-011-A	1
R1	RC 1/4 W 680 kΩ	808-891208-307-A	1
R5, R13, R20, R21, R34	RC 1/4 W 1 kΩ	808-891208-014-A	5
R9	RC 1/4 W 6.8 kΩ	808-891208-017-A	1
R15	RC 1/4 W 4.7 kΩ	808-891208-018-A	1
R22	RC 1/4 W 270 Ω	808-891208-308-A	1
R23	RC 1/4 W 120 Ω	808-891208-309-A	1
R24	RC 1/4 W 1 kΩ	808-891208-016-A	1
R26	RC 1/4 W 27 Ω	808-891208-015-A	1
R35	RC 1/4 W 10 kΩ	808-891208-019-A	1
R36	RC 1/4 W 1.2 kΩ	808-891208-020-A	1
R42	RC 1/4 W 2.2 kΩ	808-891208-012-A	1
R43	RC 1/4 W 3.3 kΩ	808-891208-013-A	1
R44	RC 1/4 W 33 kΩ	808-891208-310-A	1
RV1	RV 200 Ω	808-891208-021-A	1
RV2	RV 2 kΩ	808-891208-022-A	1
R4	RS 5 W 22 Ω	808-891208-312-A	1
C5	CE 400 V 220 μF	808-891208-313-A	1
C12	CE 25 V 220 μF	808-891208-023-A	1
C13	CE 63 V 22 μF	808-891208-025-A	1
C14	CE 16 V 4700 μF	808-891208-026-A	1
C15	CE 10 V 1000 μF	808-891208-027-A	1
C17, C23	CE 40 V 10000 μF	808-891208-028-A	2
C28	CE 50 V 22 μF	808-891208-024-A	1
C1	CF 250 Vac 0.47 μF	808-891208-316-A	1
C4	CF 250 Vac 0.22 μF	808-891208-035-A	1
C7	CF 400 V 0.1 μF	808-891208-315-A	1
C9, C10, C22	CF 50 V 0.1 μF	808-891208-030-A	3
C11	CF 50 V 0.022 μF	808-891208-036-A	1

PSD Power (C) Assembly (808-891104-003-A) -2/2

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
C18, C19	CF 50 V 0.1 μF	808-891208-031-A	2
C21	CF 50 V 0.01 μF	808-891208-032-A	1
C25	CF 630 V 2200 pF	808-891208-033-A	1
CX1	CF 50 V 1000 pF	808-891208-029-A	1
CX2	CF 50 V 0.22 μF	808-891208-034-A	1
C6	CC 400/250/125 Vac 3300 pF	808-891208-318-A	1
C8	CC 2 kV 220 pF	808-891208-317-A	1
C16	CC 250 Vac 4700 pF	808-891208-037-A	1
C26, C27	CC 400/250/125 Vac 470 pF	808-891208-319-A	2
C2, C3, C30	CC 400/250/125 Vac 2200 pF	808-891208-038-A	3
D2, D9, D15, D16	DG 600 V 1 A	808-891208-039-A	4
D1	DG 1000 V 0.8 A	808-891208-320-A	1
D4, D5, D7	DG 50 V 400 mA	808-891208-040-A	3
D8	DS 40 V 1 A	808-891208-041-A	1
D12, D14, D18	DG 50 V 300 mA	808-891208-042-A	3
D13	DG 50 V 300 mA	808-891208-043-A	1
D3	DZ 16 V 500 mW	808-891208-321-A	1
D17	DZ 13 V 500 mW	808-891208-322-A	1
D6	DZ 12 V 500 mW	808-891208-044-A	1
Q1, Q4	TRN 800 V	808-891208-324-A	2
Q2	TRP 60 V 6 A	808-891208-045-A	1
Q5	TRN 50 V 10 A	808-891208-046-A	1
Q3	TRN 40 V 2 A	808-891208-047-A	1
Q6	TRN 50 V 50 mA	808-891208-048-A	1
Z1	IC SI-3052V	808-891208-049-A	1
Z2	IC HA17431PA	808-891208-050-A	1
RC2	DSCK 40 V 5 A	808-891208-051-A	1
RC3	DFCK 200 V 10 A	808-891208-052-A	1
CN1	B2P3-VH	808-891208-053-A	1
CN2	B6P-VR	808-891208-054-A	1
NR1, NR2	VR 300V	808-891208-323-A	2
CR1	SCR 200 V 300 mA	808-891208-325-A	1
CR2	TRI 600 V 10 A	808-891208-326-A	1
PC1	PC	808-891208-327-A	1
RC1	DB 600 V 6 A	808-891208-328-A	1
L1	ELF 18D850D	808-891208-329-A	1
L2	PLA 1522B	808-891208-330-A	1
T1	CX47038-267	808-891208-331-A	1
F1	FF 250 V 3.15 A	808-891208-332-A	1


C26
C27
R45
D15
R46
C10
R13
D13
C22
C12
R23
R28
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R9
R24
R26
C13
C21
D8
R33
Cx2
R15
Cx1
Rx2
Z2
R36
C18
R34
R35
RV2
R30
R31
R44
R43
D17
R42
R22
JW2
R6
D3
D6
R27
Rx8
Cx3
PC1
R32
CN2
L2
C4
R40
Q6
D18
C9
R5
C11
R21
CR1
D12
R14
D4
D5
JW12
C16
C25
R41
JW3
JW11
JW15
C3
C2
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R20
JW10
C19
RC3
CR2
6
JW4
R4
NR1
NR2
R11
Q2
Q5
D2
T1
C23
C15
L1
R38
D14
C5
R1
R19
JW2
JW9
R10
R37
D1
R2
C7
JW8
RC2
C14
C17
R12
C6
C8
CN1
C1
R3
C30
JW13
JW6
EJW7
Z1
F1
Q1
D7
JW14 Q4
E
D9

Figure 6-29 PSD Power (C) Assy (808-891104-003-A)

PSD Power (C) Assembly (808-891104-303-A) -1/2

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
R1	RC 1/4 W 1 MΩ	808-891209-001-A	1
R2	RS 5 W 22 Ω	808-891209-002-A	1
R3	RC 1/4 W 1 kΩ	808-891209-003-A	1
R4	RC 1/2 W 47 Ω	808-891209-004-A	1
R6	RC 1/2 W 100 kΩ	808-891209-005-A	1
R7-R12	RM 2 W 47 kΩ	808-891209-006-A	6
R13-R15	RM 1 W 18 kΩ	808-891209-007-A	3
R16, R44	RC 1/4 W 10 kΩ	808-891209-008-A	2
R17	RC 1/4 W 5.6 kΩ	808-891209-009-A	1
R18	RC 1/4 W 27 kΩ	808-891209-010-A	1
R19	RC 1/6 W 680 Ω	808-891209-011-A	1
R20, R21	RC 1/2 W 22 kΩ	808-891209-012-A	2
R22, R23	RM 1 W 100 kΩ	808-891209-013-A	2
R24	RC 1/4 W 2.2 kΩ	808-891209-014-A	1
R25	RC 1/6 W 47 Ω	808-891209-015-A	1
R26	RC 1/4 W 680 Ω	808-891209-016-A	1
R27	RC 1/4 W 33 Ω	808-891209-017-A	1
R28, R29	RM 2 W 2.2 Ω	808-891209-018-A	2
R30	RS 5 W 15 Ω	808-891209-019-A	1
R31	RM 2 W 6.8 Ω	808-891209-020-A	1
R32	RC 1/4 W 4.7 Ω	808-891209-021-A	1
R33	RM 1/4 W 2 kΩ	808-891209-022-A	1
R34	RC 1/2 W 820 Ω	808-891209-023-A	1
R35	RC 1/4 W 220 Ω	808-891209-024-A	1
R36	RM 1 W 10 Ω	808-891209-025-A	1
R37	RM 2 W 15 Ω	808-891209-026-A	1
R38-R40	RM 2 W 1.2 kΩ	808-891209-027-A	3
R41	RC 1/4 W 330 Ω	808-891209-028-A	1
R42	RC 1/4 W 1 kΩ	808-891209-029-A	1
R43	RM 2 W 1 kΩ	808-891209-030-A	1
R45	RC 1/4 W 680 kΩ	808-891209-031-A	1
R46	RM 1/4 W 15 kΩ	808-891209-032-A	1
R47	RV 0.5 W 1 kΩ	808-891209-033-A	1
R48	RM 1/4 W 1.2 kΩ	808-891209-034-A	1
R49	RC 1/6 W 4.7 Ω	808-891209-035-A	1
R50	RC 1/4 W 2.2 Ω	808-891209-036-A	1
C1	CF 250Vac 0.47 µF	808-891209-045-A	1
C2, C3, C5-C7, C9, C28	CC 400Vac 2200 pF	808-891209-046-A	7
C4	CF 250Vac 0.22 µF	808-891209-047-A	1
RC2	DSCK 40 V 5 A	808-891209-069-A	1
RC3	DFCK 200 V 10 A	808-891209-070-A	1

PSD Power (C) Assembly (808-891104-303-A) -2/2

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
Q2	TRN 800 V 5A or 10 A	808-891209-071-A	1
Q3	TRP 50 V 2 A	808-891209-072-A	1
Q4-Q6	TRN 50 V 0.15 A	808-891209-073-A	3
Q7	TRN 50 V 2 A	808-891209-074-A	1
Q1	SCR 400 V 5 A	808-891209-075-A	1
Z1	IC TLP732-LF2	808-891209-076-A	1
Z2	IC TLP741-LF2	808-891209-077-A	1
Z3	IC µPC1093J	808-891209-078-A	1
Z4	IC SI-3052V	808-891209-079-A	1
SQ1	VR 470 V 2500 A	808-891209-080-A	1
ZD1, ZD2	ZD 120 V 0.5 W	808-891209-081-A	2
ZD3	ZD 6.2 V 0.4 W	808-891209-082-A	1
ZD4	ZD 5.1 V 0.4 W	808-891209-083-A	1
ZD5	ZD 3.9 V 0.4 W	808-891209-084-A	1
ZD6	ZD 39 V 0.4 W	808-891209-085-A	1
CN1	CN B2P3-VH	808-891209-086-A	1
CN2	CN B6P-VR	808-891209-087-A	1
L1, L2	L 8 mH 2 A	808-891209-088-A	2
T1	TM1294	808-891209-089-A	1
F1	FF 250 V 3.15 A	808-891209-090-A	1
F2	FR 250 V 2 A	808-891209-091-A	1
C8	CE 400 V 270 µF	808-891209-049-A	1
C10	CF 50 V 0.1 µF	808-891209-050-A	1
C11	CF 630 V 0.01 µF	808-891209-051-A	1
C12	CE 63 V 27 µF	808-891209-052-A	1
C13	CE 50 V 3.3 µF	808-891209-053-A	1
C14	CF 63 V 0.22 µF	808-891209-054-A	1
C15	CF 50 V 0.033 µF	808-891209-055-A	1
C16	CF 100 V 0.68 µF	808-891209-056-A	1
C17	CE 50 V 56 µF	808-891209-057-A	1
C18	CE 10 V 4700 µF	808-891209-058-A	1
C19, C20	CE 16 V 180 µF	808-891209-059-A	2
C21	CF 400 V 1000 pF	808-891209-060-A	1
C22	CF 400 V 4700 pF	808-891209-061-A	1
C23, C24	CE 40 V 10000 µF	808-891209-062-A	2
C25, C26	CF 63 V 0.1 µF	808-891209-063-A	2
C27	CF 50 V 1000 pF	808-891209-064-A	1
D1-D3, D5, D6	DG 600 V 1 A	808-891209-065-A	5
D4	DF 1000 V 1 A	808-891209-066-A	1
D7	DF 40 V 1 A	808-891209-067-A	1
D8	DGM 200V 0.5 A	808-891209-093-A	1
RC1	DB 600 V 6 A	808-891209-068-A	1

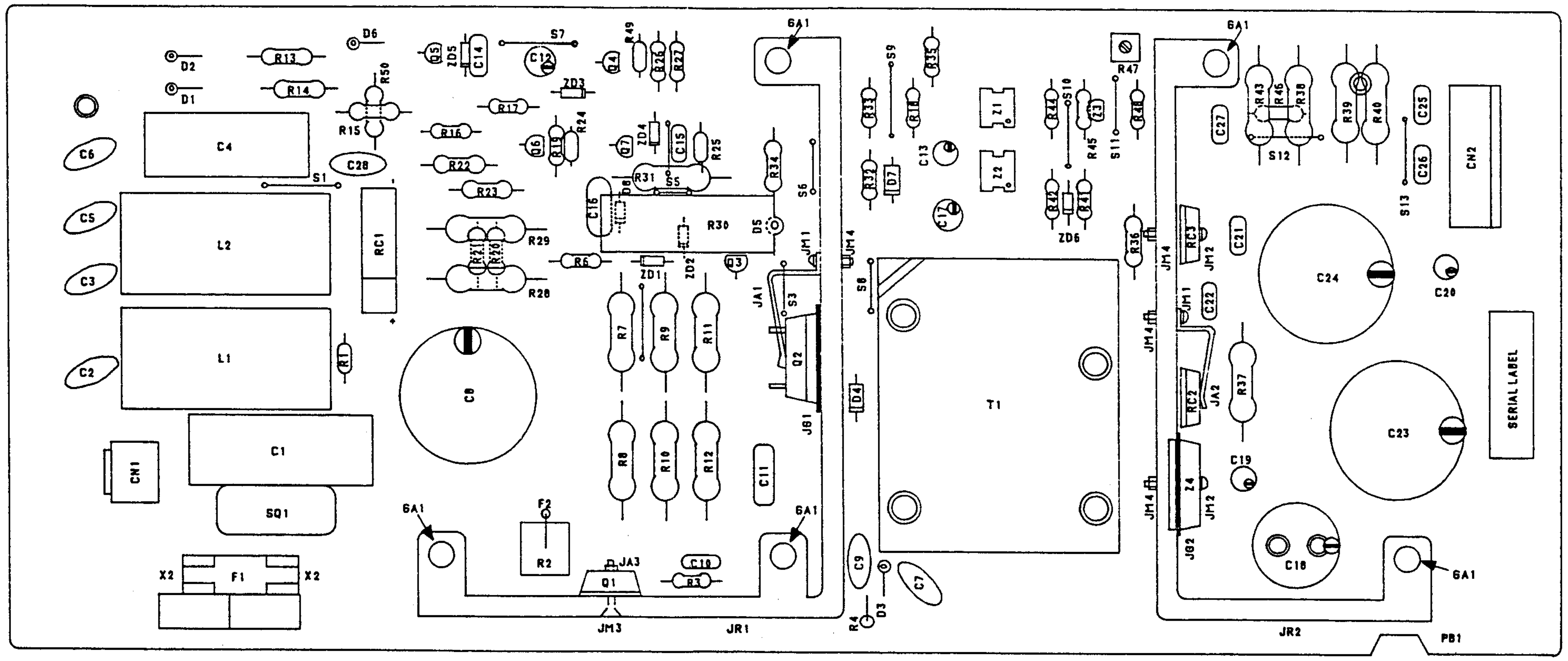

C6
C5
C3
C2
CN1
C4
L2
L1
C1
SQ1
F1
X2
X2
D1
D2
R13
R14
D6
R50
R15
C28
S1
RC1
C8
R16
R22
R23
R29
R28
R17
ZD5
C14
C12
S7
ZD3
Q4
R49
R26
R27
Q6
R19
R24
Q7
ZD4
C15
R25
C16
D8
R31
S5
R30
D5
R6
ZD1
ZD2
Q3
R7
R9
R11
R8
R10
R12
C11
F2
R2
JA3
Q1
C10
R3
JM3
JR1
6A1
6A1
6A1
R34
S6
JM1
JM4
JA1
S3
Q2
JB1
S8
D4
R33
R32
D7
S9
R18
R35
C13
C17
Z1
Z2
T1
C9
R4
D3
C7
R47
R44
S10
Z3
R45
S11
R48
R42
R41
ZD6
R36
6A1
C27
R43
R46
R38
S12
R39
R40
C25
C26
S13
CN2
RC3
JM2
JM4
C21
C22
JM1
JM4
RC2
JA2
R37
Z4
JM2
JM4
JB2
C24
C20
C23
C19
C18
SERIAL LABEL
6A1
JR2
PB1

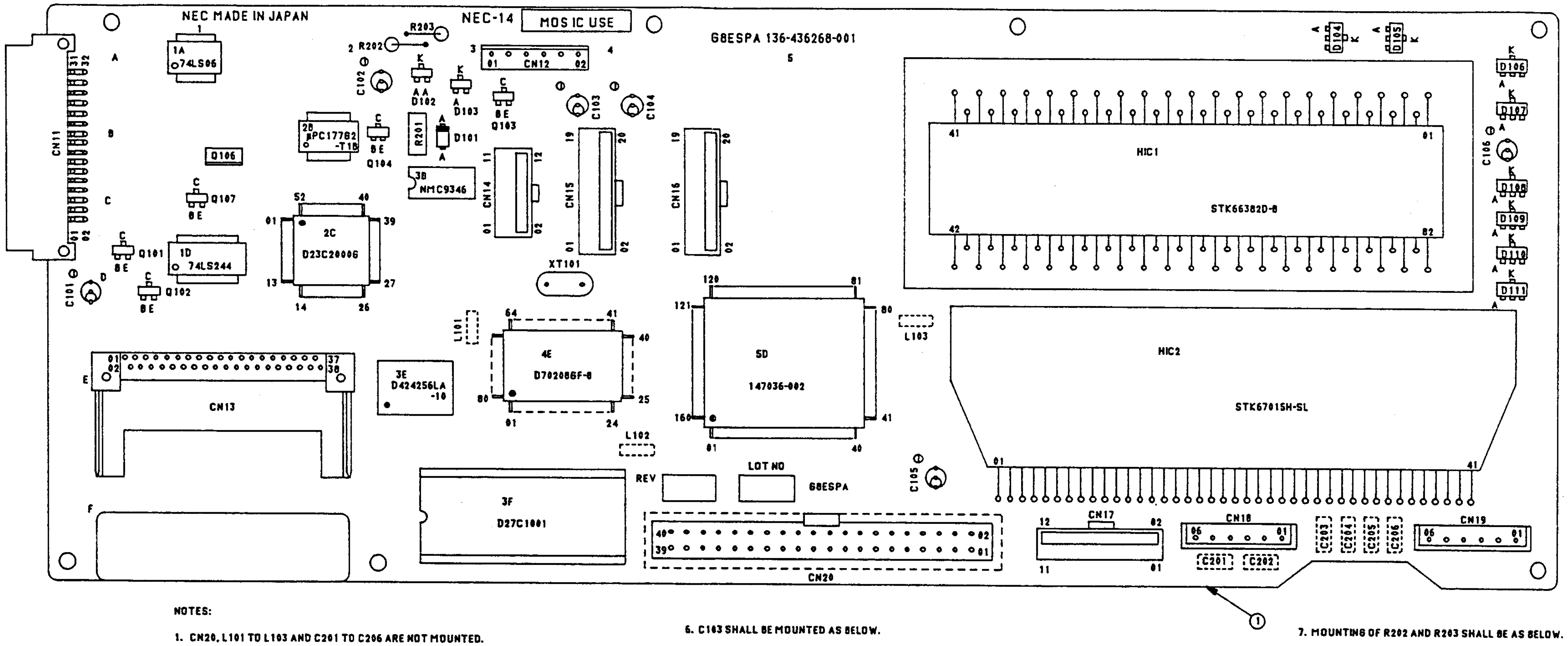
Figure 6-30 PSD Power (C) Assy (808-891104-303-A)

G8ESPA PCB Assembly (136-436268-001-A) -1/2

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
4E	D70208GF-8	802-140236-103-A	1
5D	147036-002	802-147036-002-A	1
3F	PROM (27C1001) Rework	136-211641-001-A	1
2C	D23C2000G-F33	802-140874-333-A	1
3E	4C4256L-10	802-140494-210-A	1
3B	NMC9346	802-140501-001-A	1
1A	74LS06	802-120467-005-A	1
1D	74LS244	802-120203-005-A	1
2B	µPC177G2-T1B	802-180380-001-A	1
HIC1	STK66382D-B	802-180386-004-A	1
HIC2	STK67015H-SL	802-180385-002-A	1
Q101	2SC1623-T1B	802-250049-101-0	1
Q103	2SA812-T1B	802-250050-002-0	1
Q106	2SB794	802-260054-0	1
Q102, Q107	FA1A4M-T1B	802-250044-002-A	2
Q104	FP1L2Q-T1B	802-250094-001-0	1
D102	1S2837-T1B	802-220080-001-A	1
D103	RD3.3MB2-T1B	802-230026-106-A	1
D104-D111	RD6.8PB-T1	802-230025-021-A	8
D101	T-FRDCM40V1.0A	802-210047-002-A	1
C53-C55	CKC10B1H222K-T	802-410073-033-A	3
C1-C5, C21-C36, C47	CCC10CH1H101J-T	802-410072-049-A	22
C41, C42	CCC10CH1H300J-T	802-410072-036-A	2
C50	CCC10CH1H331J-T	802-410072-061-A	1
C6-C9, C13-C18, C52, C56-C60	CKC10B1H102K-T	802-410072-025-A	16
C10-C12, C19, C20 C37-C40, C43-C46, C48, C49, C51	CKC10F1E104Z-T	802-410073-473-A	16
C101-C103, C105	T-CEK16V22µF	808-935300-111-A	4
C104, C106	T-CEK50V22µF	808-935300-101-A	2
R201	MCR50JZHJ301-T	802-310070-251-A	1
R127, R128	MCR100JZHJ120-T	802-310070-427-A	2
R117, R118	MCR100JZHJ510-T	802-310070-466-A	2
R36-R40, R42, R45-R77, R81, R86-R89, R93-R97, R101, R110-R115	RM73B2A101J-T	802-310054-049-A	56
R82	RM73B2A181J-T	802-310054-055-A	1
R80	RM73B2A331J-T	802-310054-061-A	1
R85	RM73B2A621J-T	802-310054-068-A	1

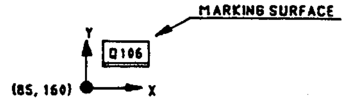
G8ESPA PCB Assembly (136-436268-001-A) -2/2

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
R1, R2, R99	RM73B2A681J-T	802-310054-069-A	3
R27	RM73B2A911J-T	802-310054-072-A	1
R4-R8	RM73B2A102J-T	802-310054-073-A	5
R29, R103	RM73B2A132J-T	802-310054-076-A	2
R9	RM73B2A152J-T	802-310054-077-A	1
R104	RM73B2A242J-T	802-310054-082-A	1
R102	RM73B2A272J-T	802-310054-083-A	1
R28	RM73B2A362J-T	802-310054-086-A	1
R3, R11-R16, R21-R26, R30-R34, R98, R100, R116	RM73B2A472J-T	802-310054-089-A	21
R119-R122	RM73B2A303J-T	802-310054-108-A	4
R17, R19, R20, R41 R78, R79, R84, R90 R91, R106, R108, R134, R135	RM73B2A103J-T	802-310054-097-A	13
R18, R83	RM73B2A473J-T	802-310054-113-A	2
R123-R126	RM73B2A474J-T	802-310054-137-A	4
R10	RM73B2A104J-T	802-310054-121-A	1
R35	RM73B2A105J-T	802-310054-145-A	1
R132	RM73B2A162J-T	802-310054-078-A	1
XT101	CSA16.00MX	808-970112-009-A	1
L1-L9	BLM41A04PT-T	802-530167-002-A	9
R131	MCR25JZHJ183-T	802-310070-097-A	1
R202, R203	RSM3FB30ΩJUZ	802-310051-616-A	2
CN11	PCN10-32P-2.54DS	808-955329-104-A	1
CN12	VR-06	808-955247-806-A	1
CN13	ICP-H38	802-720076-138-0	1
CN15, CN16	FH11-20S-1.27DSA	808-955311-020-A	2
CN14, CN17	FH11-12S-1.27DSA	808-955311-012-A	2
CN18	HR06S, Black	808-955247-563-A	1
CN19	HR06S, White	808-955247-561-A	1
(1)	G8ESP PWB	136-456268-D	1
(2E)	Insulating Sheet	136-852765-001-A	1
(3F)	32Pin, IC Socket	802-730031-132-0	1

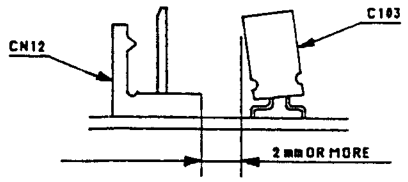

NEC MADE IN JAPAN
NEC-14
MOS IC USE
G8ESPA 136-436268-001
1
2
3
4
5
A
B
C
D
E
F
CN11
1A
74LS06
R202
R203
C102
D102
D103
D101
R201
Q103
Q104
2B
µPC17762
-T1B
CN12
C103
C104
Q106
Q107
Q101
Q102
C101
1D
74LS244
2C
D23C2000G
3B
NMC9346
CN14
CN15
CN16
XT101
L101
4E
D70208GF-8
L102
5D
147036-002
L103
CN13
3E
D424256LA
-10
3F
D27C1001
REV
LOT NO
G8ESPA
C105
CN20
HIC1
STK66382D-8
HIC2
STK67015H-SL
D104
D105
D106
D107
C106
D108
D109
D110
D111
CN17
CN18
CN19
C201
C202
C203
C204
C205
C206
①

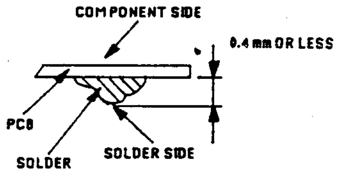
NOTES:

1. CN20, L101 TO L103 AND C201 TO C206 ARE NOT MOUNTED.
2. 3F IS MOUNTED WITH IC SOCKET ON THE PCB.
3. CN11 AND 13 SHALL BE MOUNTED WITHOUT ANY CLEARANCE ON THE PCB.
4. NO DIRT SUCH AS FLUX SHALL ADHERE TO CONTACTS OF CONNECTORS CN11 TO 19 AND CONTACT PART OF IC SOCKET.
5. MOUNT Q106 WITH MARKING SURFACE SIDE DIRECTING TO UPPER SIDE OF THIS DRAWING.


MARKING SURFACE
Y
Q106
(85, 160)
X

6. C103 SHALL BE MOUNTED AS BELOW.


CN12
C103
2 mm OR MORE


COMPONENT SIDE
0.4 mm OR LESS
PCB
SOLDER
SOLDER SIDE

7. MOUNTING OF R202 AND R203 SHALL BE AS BELOW.

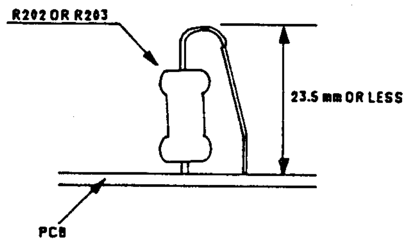
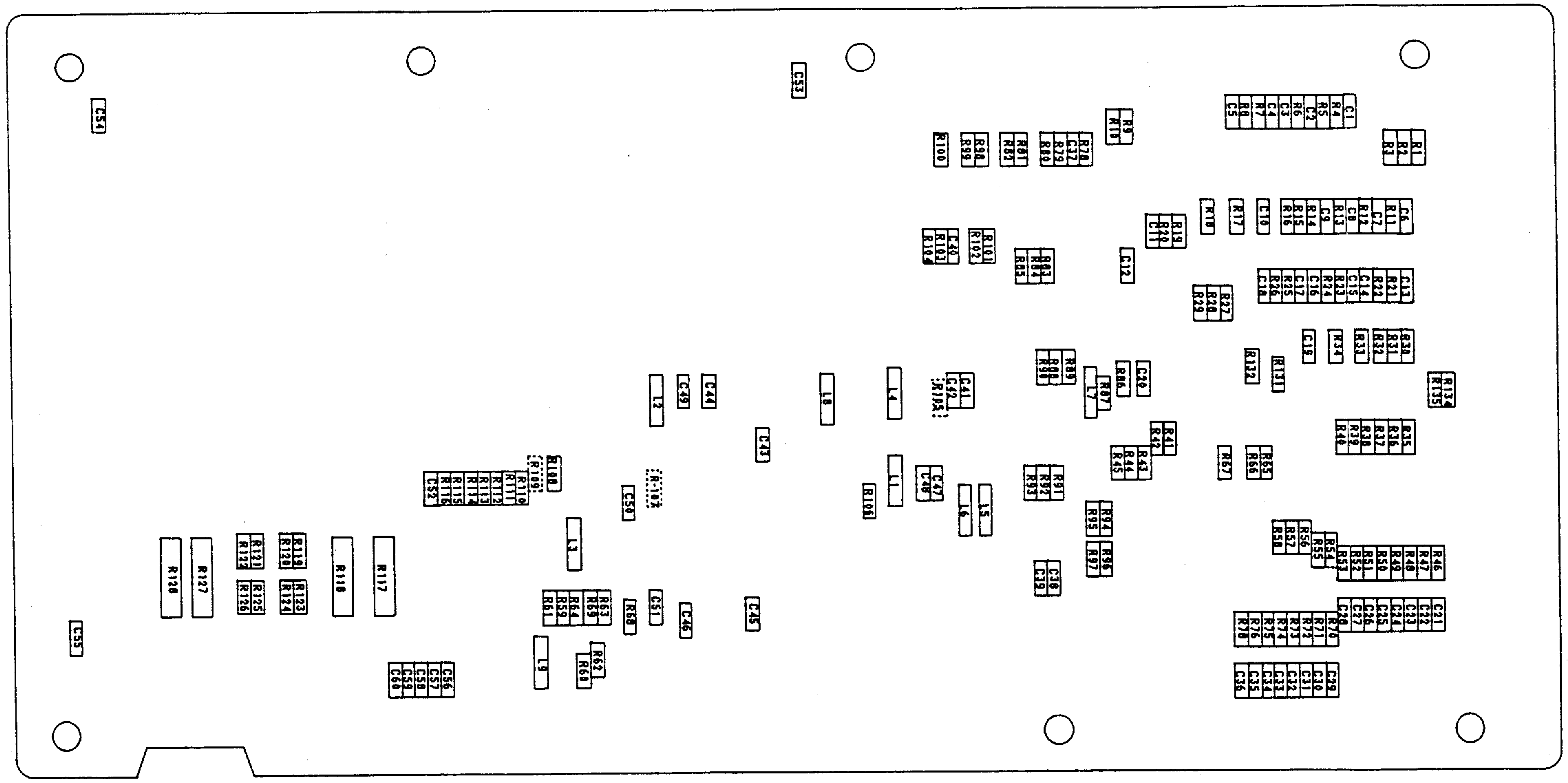

R202 OR R203
23.5 mm OR LESS
PCB

Figure 6-31 G8ESPA PCB Assembly (Component Side)


C54
C53
R100
R98
R99
R81
R82
R78
R79
R80
R9
R10
C1
R4
R5
C2
R6
C3
C4
R7
R8
C5
R1
R2
R3
R18
R17
C10
C11
C12
R101
R102
R103
R104
C40
R83
R84
R85
R22
R28
R29
C19
R132
R131
R134
R135
R89
R88
R90
C20
R86
R87
L7
C41
C42
R105
L2
C49
C44
L8
L4
C43
R108
R109
R110
R111
R112
R113
R114
R115
R116
C52
C50
R107
R106
L1
C47
C48
L6
L5
R91
R92
R93
R94
R95
R96
R97
R41
R42
R43
R44
R45
R65
R66
R67
R35
R36
R37
R38
R39
R40
R46
R47
R48
R49
R50
R51
R52
R53
R54
R55
R56
R57
R58
C38
C39
C21
C22
C23
C24
C25
C26
C27
C28
R70
R71
R72
R73
R74
R75
R76
C29
C30
C31
C32
C33
C34
C35
C36
R128
R127
R121
R122
R119
R120
R125
R126
R123
R124
R118
R117
L3
R63
R64
R59
R61
R69
R68
C51
C46
C45
L9
R62
R60
C55
C56
C57
C58
C59
C60

NOTE : R43, R44, R92, R105, R107 AND R109 IS NOT MOUNTED.

Figure 6-31 G8ESPA PCB Assembly (Solder Side)

G8ESPB PCB Assembly (136-436268-002-A) -1/2

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
4E	D70208GF-8	802-140236-103-A	1
5D	147036-002	802-147036-002-A	1
3F	PROM (27C1001) Rework	136-211641-007-A	1
2C	D23C2000G-F33	802-140874-333-A	1
3E	4C4256L-10	802-140494-210-A	1
3B	9346	802-140501-001-A	1
1A	74LS06	802-120467-005-A	1
1D	74LS244	802-120203-005-A	1
2B	µPC177G2-T1	802-180380-001-A	1
HIC1	STK66382D-B	802-180386-004-A	1
HIC2	STK67015H-SL	802-180385-002-A	1
Q101	2SC1623-T1B	802-250049-101-0	1
Q103	2SA812-T1B	802-250050-002-0	1
Q106	2SB794	802-260054-0	1
Q102, Q107	FA1A4M-T1B	802-250044-002-A	2
Q104	FP1L2Q-T1B	802-250094-001-0	1
D102	1S2837-T1B	802-220080-001-A	1
D103	RD3.3MB2-T1B	802-230026-106-A	1
D104-D111	RD6.8PB-T1	802-230025-021-A	8
D101	T-FRDCM40V1.0A	802-210047-002-A	1
C53-C55	CKC10B1H222K-T	802-410073-033-A	3
C1-C5, C21-C36, C47	CCC10CH1H1C1J	802-410072-049-A	22
C41, C42	CCC10CH1H300J-T	802-410072-036-A	2
C50	CCC10CH1H331J-T	802-410072-061-A	1
C6-C9, C13-C18, C52, C56-C60	CKC10B1H102K-T	802-410073-025-A	16
C10-C12, C19, C20, C37-C40, C43-C46, C48, C49, C51	CKC10F1E104Z-T	802-410073-473-A	16
C101-C103, C105	T-CEK16V22µF	808-935300-111-A	4
C104, C106	T-CEK50V22µF	808-935300-101-A	2
R201	MCR50JZHJ301-T	802-310070-251-A	1
R127, R128	MCR100JZHJ120-T	802-310070-427-A	2
R117, R118	MCR100JZHJ510-T	802-310070-466-A	2
R36-R40, R42, R45-R77, R81, R86-R89, R93-R97, R101, R110-R115	RM73B2A101J-T	802-310054-049-A	56
R82	RM73B2A181J-T	802-310054-055-A	1
R80	RM73B2A331J-T	802-310054-061-A	1
R85	RM73B2A621J-T	802-310054-068-A	

G8ESPB PCB Assembly (136-436268-002-A) -2/2

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
R1, R2, R99	RM73B2A681J-T	802-310054-069-A	3
R27	RM73B2A911J-T	802-310054-072-A	1
R4-R8	RM73B2A102J-T	802-310054-073-A	5
R29, R103	RM73B2A132J-T	802-310054-076-A	2
R9	RM73B2A152J-T	802-310054-077-A	1
R104	RM73B2A242J-T	802-310054-082-A	1
R102	RM73B2A272J-T	802-310054-083-A	1
R28	RM73B2A362J-T	802-310054-086-A	1
R3, R11-R16, R21-R26, R26, R30-R34, R98, R100, R116	RM73B2A472J-T	802-310054-089-A	21
R119-R122	RM73B2A303J-T	802-310054-108-A	4
R17, R19, R20, R41, R78, R79, R84, R90, R91, R106, R108, R134, R135	RM73B2A103J-T	802-310054-097-A	13
R18, R83	RM73B2A473J-T	802-310054-113-A	2
R123-R126	RM73B2A474J-T	802-310054-137-A	4
R10	RM73B2A104J-T	802-310054-121-A	1
R35	RM73B2A105J-T	802-310054-145-A	1
R132	RM73B2A162J-T	802-310054-078-A	1
XT101	CSA16.00MX	808-970112-009-A	1
L1-L9	BLM41A04PT-T	802-530167-002-A	9
R131	MCR25JZHJ183-T	802-310070-097-A	1
R202, R203	RSM3FB30ΩJUZ	802-310051-616-A	2
CN11	PCN10-32P-2.54DS	808-955329-104-A	1
CN12	VR-06	808-955247-806-A	1
CN13	ICP-H38	802-720076-138-0	1
CN15, CN16	FH11-20S-1.27DSA	808-955311-020-A	2
CN14, CN17	FH11-12S-1.27DSA	808-955311-012-A	2
CN18	HR06S, Black	808-955247-563-A	1
CN19	HR06S, Natural	808-955247-561-A	1
CN20	STP-40P	802-720044-106-0	1
(1)	G8ESPB PCB	136-456268-D	1
(78)	32 Pin IC Socket	802-730031-132-0	1
(90)	Insulation Sheet	136-852765-001-A	1

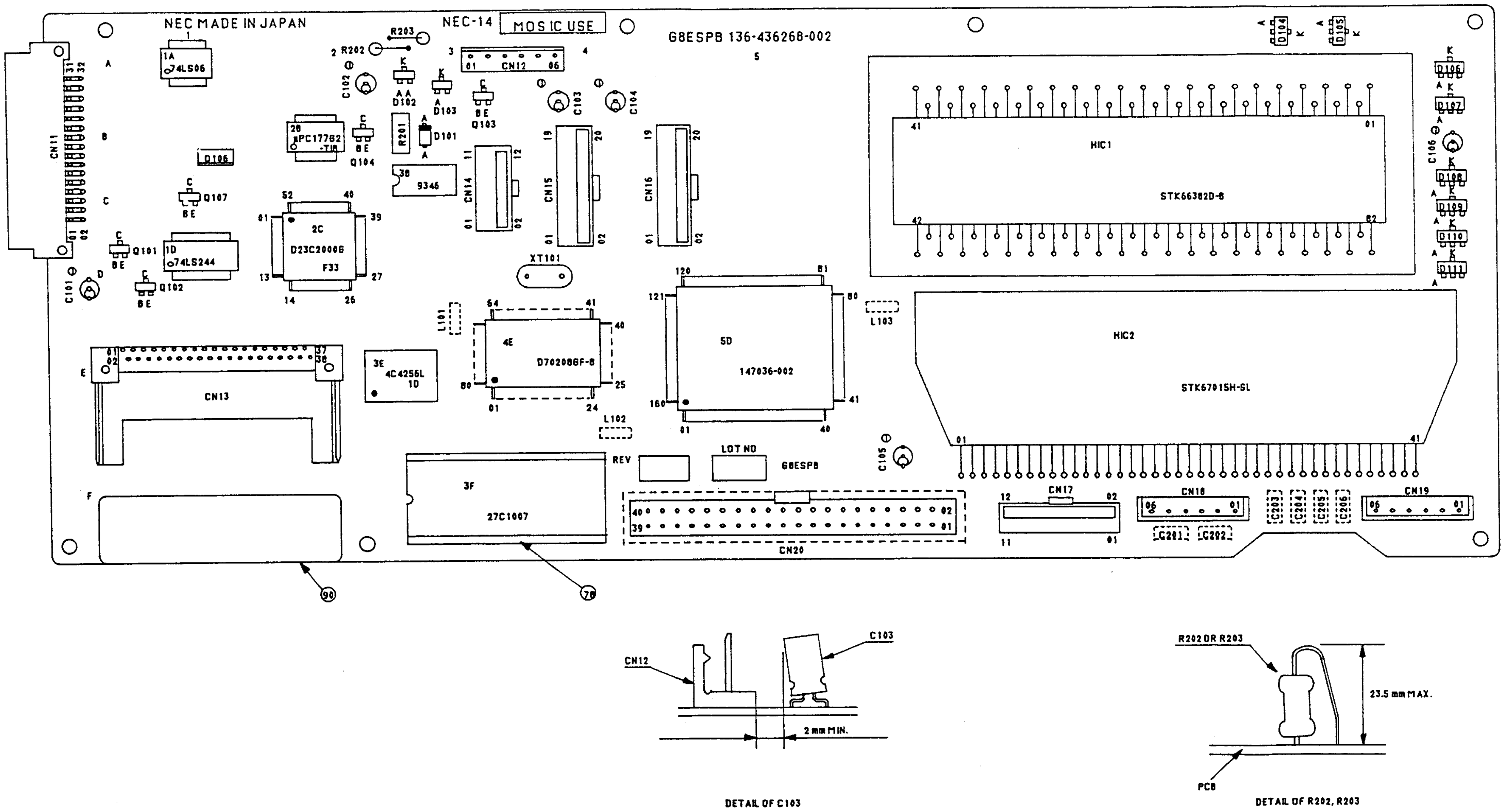
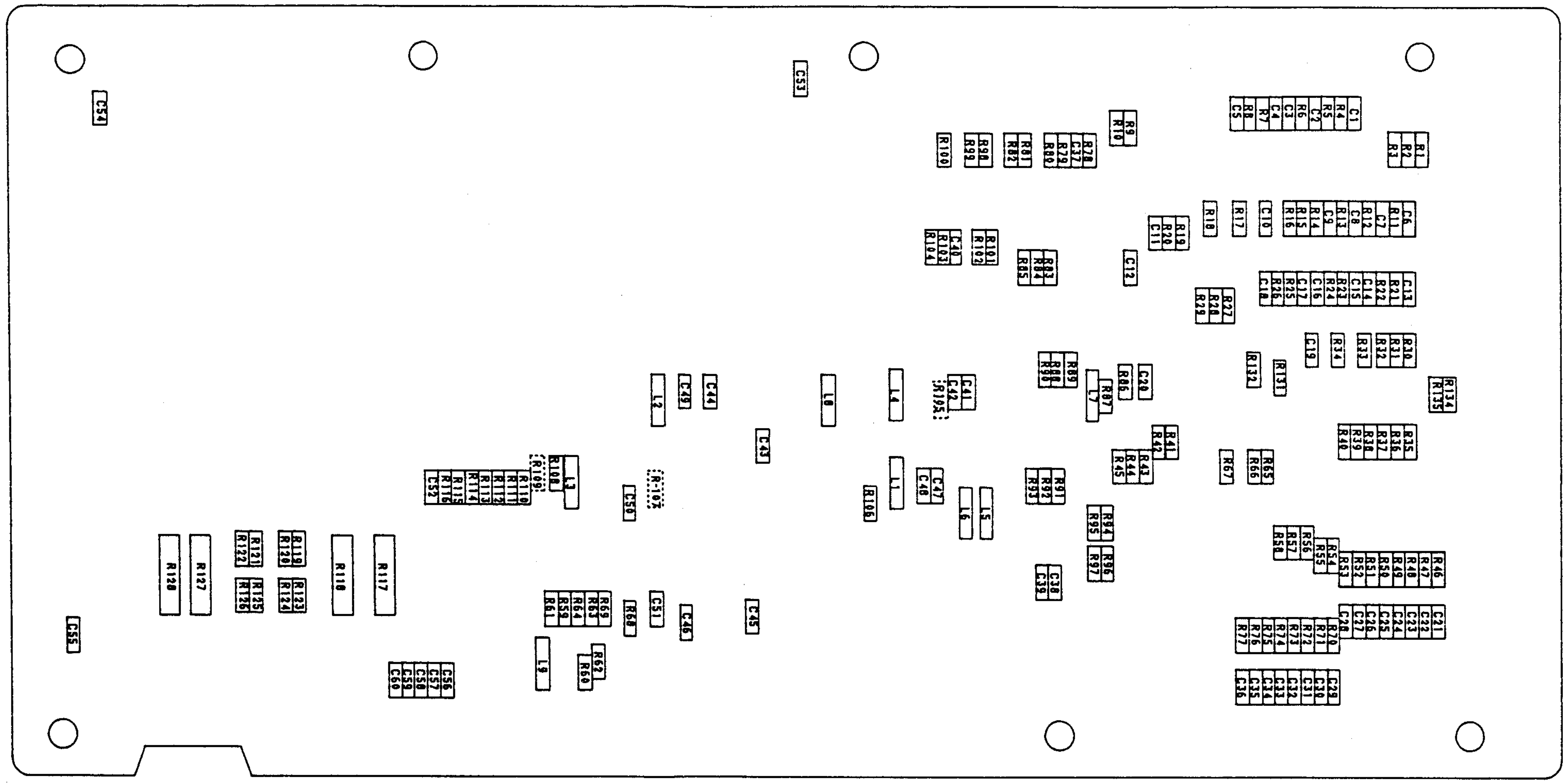

NEC MADE IN JAPAN
NEC-14
MOS IC USE
G8ESPB 136-436268-002
CN11
1A
74LS06
1D
74LS244
2B
μPC17762-TIA
2C
D23C2000G
F33
3B
9346
3E
4C4256L
1D
3F
27C1007
4E
D70208GF-8
5D
147036-002
HIC1
STK66382D-8
HIC2
STK6701SH-SL
CN12
CN13
CN14
CN15
CN16
CN17
CN18
CN19
CN20
XT101
L101
L102
L103
R201
R202
R203
C101
C102
C103
C104
C105
C106
C201
C202
C203
C204
C205
C206
D101
D102
D103
D104
D105
D106
D107
D108
D109
D110
D111
Q101
Q102
Q103
Q104
Q107
REV
LOT NO
G8ESPB
90
78
CN12
C103
2 mm MIN.
DETAIL OF C103
R202 OR R203
23.5 mm MAX.
PCB
DETAIL OF R202, R203

Figure 6-32 G8ESPB PCB Assembly (Component Side)


C54
C53
C55
R128
R127
R118
R117
L2
L8
L4
L1
L9
L6
L5
L3
C49
C44
C43
C45
C46
C51
C50
R106
R100
R18
R17
C10
C12
R132
R131
C19
R67

NOTE : R43, R44, R92, R105, R107, R109 ARE NOT MOUNTED.

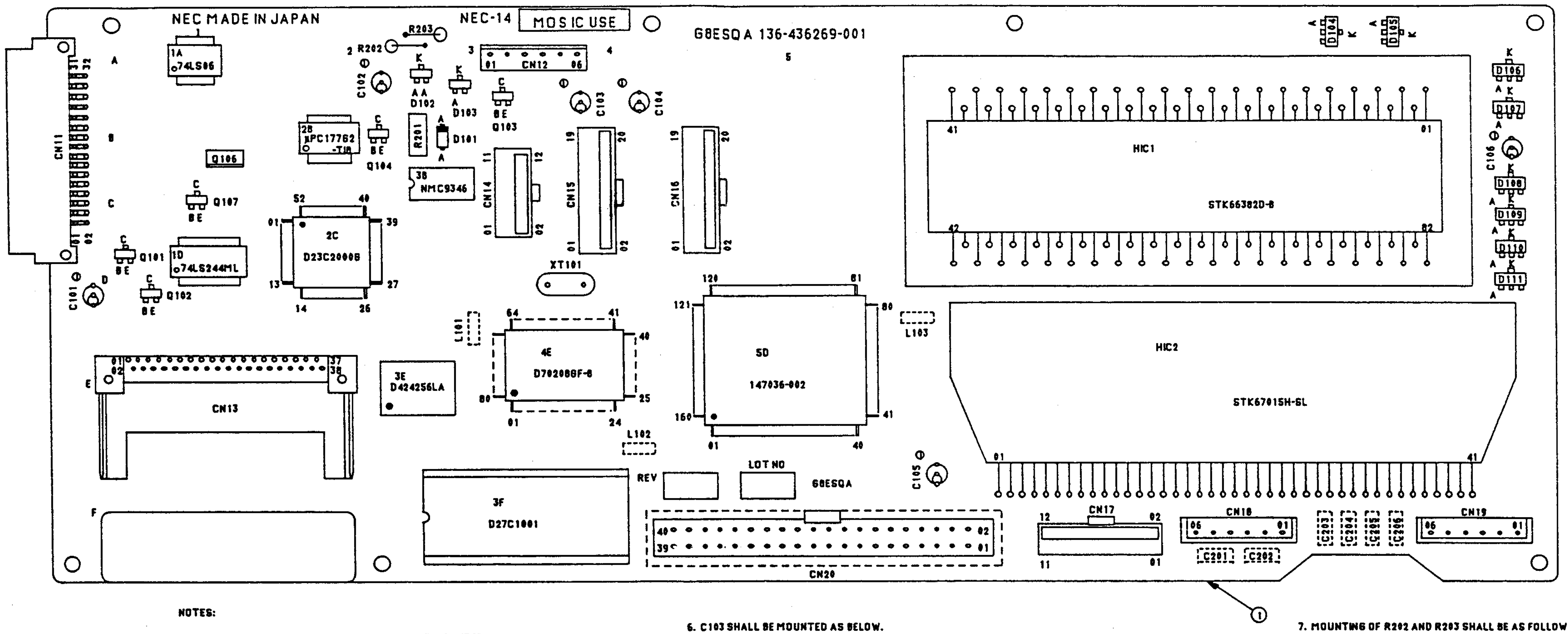
Figure 6-32 G8ESPB PCB Assembly (Solder Side)

G8ESQA PCB Assembly (136-436269-001-A) -1/2

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
4E	D70208GF-8	802-140236-103-A	1
5D	147036-002	802-147036-002-A	1
3F	PROM (27C1001) Rework	136-211641-001-A	1
2C	D23C2000G-F43	802-140874-043-A	1
3E	4C256L-10	802-140494-210-A	1
3B	NMC9346	802-140501-001-A	1
1A	74LS06	802-120467-005-A	1
1D	74LS244	802-120203-005-A	1
2B	μPC177G2-T1B	802-180380-001-A	1
HIC1	STK66382D-B	802-180386-004-A	1
HIC2	STK67015H-SL	802-180385-002-A	1
Q101	2SC1623-T1B	802-250049-101-0	1
Q103	2SA812-T1B	802-250050-002-0	1
Q106	2SB794	802-260054-0	1
Q102, Q107	FA1A4M-T1B	802-250044-002-A	2
Q104	FP1L2Q-T1B	802-250094-001-0	1
D102	1S2837-T1B	802-220080-001-A	1
D103	RD3.3MB2-T1B	802-230026-106-A	1
D104-D111	RD6.8PB-T1	802-230025-021-A	8
D101	T-FRDCM40V1.0A	802-210047-002-A	1
C53-C55	CKC10B1H222K-T	802-410073-033-A	3
C1-C5, C21-C36, C47	CCC10CH1H101J-T	802-410072-049-A	22
C41, C42	CCC10CH1H300J-T	802-410072-036-A	2
C50	CCC10CH1H331J-T	802-410072-061-A	1
C6-C9, C13-C18, C52, C56-C60	CKC10B1H102K-T	802-410073-025-A	16
C10-C12, C19, C20, C37-C40, C43-C46, C48, C49, C51	CKC10F1E104Z-T	802-410073-473-A	16
C101-C103, C105	T-CEK16V22μF	808-935300-111-A	4
C104, C106	T-CEK50V22μF	808-935300-101-A	2
R201	MCR50JZHJ301-T	802-310070-251-A	1
R127, R128	MCR100JZHJ120-T	802-310070-427-A	2
R117, R118	MCR100JZHJ510-T	802-310070-466-A	2
R36-R40, R42, R45-R77, R81, R86-R89, R93-R97, R101, R110-R115	RM73B2A101J-T	802-310054-049-A	56
R82	RM73B2A181J-T	802-310054-055-A	1
R80	RM73B2A331J-T	802-310054-061-A	1
R85	RM73B2A621J-T	802-310054-068-A	1
R1, R2, R99	RM73B2A681J-T	802-310054-069-A	3
R27	RM73B2A911J-T	802-310054-072-A	1
R4-R8	RM73B2A102J-T	802-310054-073-A	5
R29, R103	RM73B2A132J-T	802-310054-076-A	2
R9	RM73B2A152J-T	802-310054-077-A	1

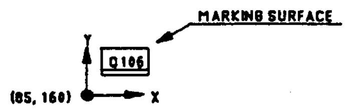
G8ESQA PCB Assembly (136-436269-001-A) -2/2

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
R104	RM73B2A242J-T	802-310054-082-A	1
R102	RM73B2A272J-T	802-310054-083-A	1
R28	RM73B2A362J-T	802-310054-086-A	1
R3, R11-R16, R21-R26, R30-R34, R98, R100, R116	RM73B2A472J-T	802-310054-089-A	21
R119-R122	RM73B2A303J-T	802-310054-108-A	4
R17, R19, R20, R41 R78, R79, R84, R90 R91, R106, R108, R134, R145	RM73B2A103J-T	802-310054-097-A	13
R18, R83	RM73B2A473J-T	802-310054-113-A	2
R123-R126	RM73B2A474J-T	802-310054-137-A	4
R10	RM73B2A104J-T	802-310054-121-A	1
R35	RM73B2A105J-T	802-310054-145-A	1
R132	RM73B2A162J-T	802-310054-078-A	1
XT101	CSA16.00MX	808-970112-009-A	1
L1-L9	BLM41A04PT-T	802-530167-002-A	9
R131	MCR25JZHJ183-T	802-310070-097-A	1
R202, R203	RSM3FB30ΩJUZ	802-310051-616-A	2
CN11	PCN10-32P-2.54DS	808-955329-104-A	1
CN12	VR-06	808-955247-806-A	1
CN13	ICP-H38	802-720076-138-0	1
CN15, CN16	FH11-20S-1.27DSA	808-955311-020-A	2
CN14, CN17	FH11-12S-1.27DSA	808-955311-012-A	2
CN18	HR06S, Black	808-955247-563-A	1
CN19	HR06S, White	808-955247-561-A	1
(1)	G8ESQ PWB	136-456269-D	1
(2E)	Insulating Sheet	136-852765-001-A	1
(3F)	32 Pin, IC Socket	802-730031-132-0	1

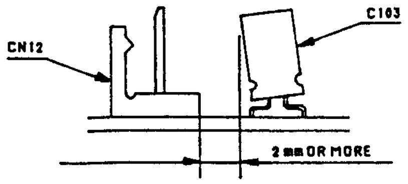

NEC MADE IN JAPAN
NEC-14
MOS IC USE
G8ESQA 136-436269-001
CN11
A
B
C
D
E
F
1A 74LS06
R203
R202
2
3
4
5
C102
D102
D103
D101
K
A
R201
Q103
Q104
Q106
Q107
Q101
Q102
C101
2B μPC17762 -T1B
3B NMC9346
CN12
01
06
C103
C104
CN14
CN15
CN16
XT101
2C D23C2000B
1D 74LS244ML
CN13
3E D424256LA
L101
4E D70208GF-8
L102
3F D27C1001
REV
LOT NO
G8ESQA
5D 147036-002
L103
C105
HIC1 STK66382D-8
HIC2 STK67015H-6L
D104
D105
D106
D107
C106
D108
D109
D110
D111
CN17
CN18
CN19
CN20
C201
C202
C203
C204
C205
C206
①

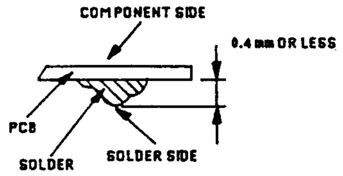
NOTES:

1. CN20, L101 TO L103 AND C201 TO C206 ARE NOT MOUNTED.
2. 3F IS MOUNTED WITH IC SOCKET ON THE PCB.
3. CN11 AND 13 SHALL BE MOUNTED WITHOUT ANY CLEARANCE ON THE PCB.
4. NO DIRT SUCH AS FLUX SHALL ADHERE TO CONTACTS OF CONNECTORS CN11 TO 19 AND CONTACT PART OF IC SOCKET.
5. MOUNT Q106 WITH MARKING SURFACE SIDE DIRECTING TO UPPER SIDE OF THIS DRAWING.


MARKING SURFACE
Q106
Y
X
(85, 160)

6. C103 SHALL BE MOUNTED AS BELOW.


CN12
C103
2 mm OR MORE


COMPONENT SIDE
0.4 mm OR LESS
PCB
SOLDER
SOLDER SIDE

7. MOUNTING OF R202 AND R203 SHALL BE AS FOLLOWS.

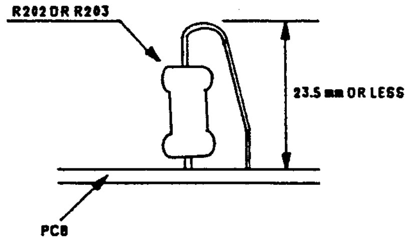
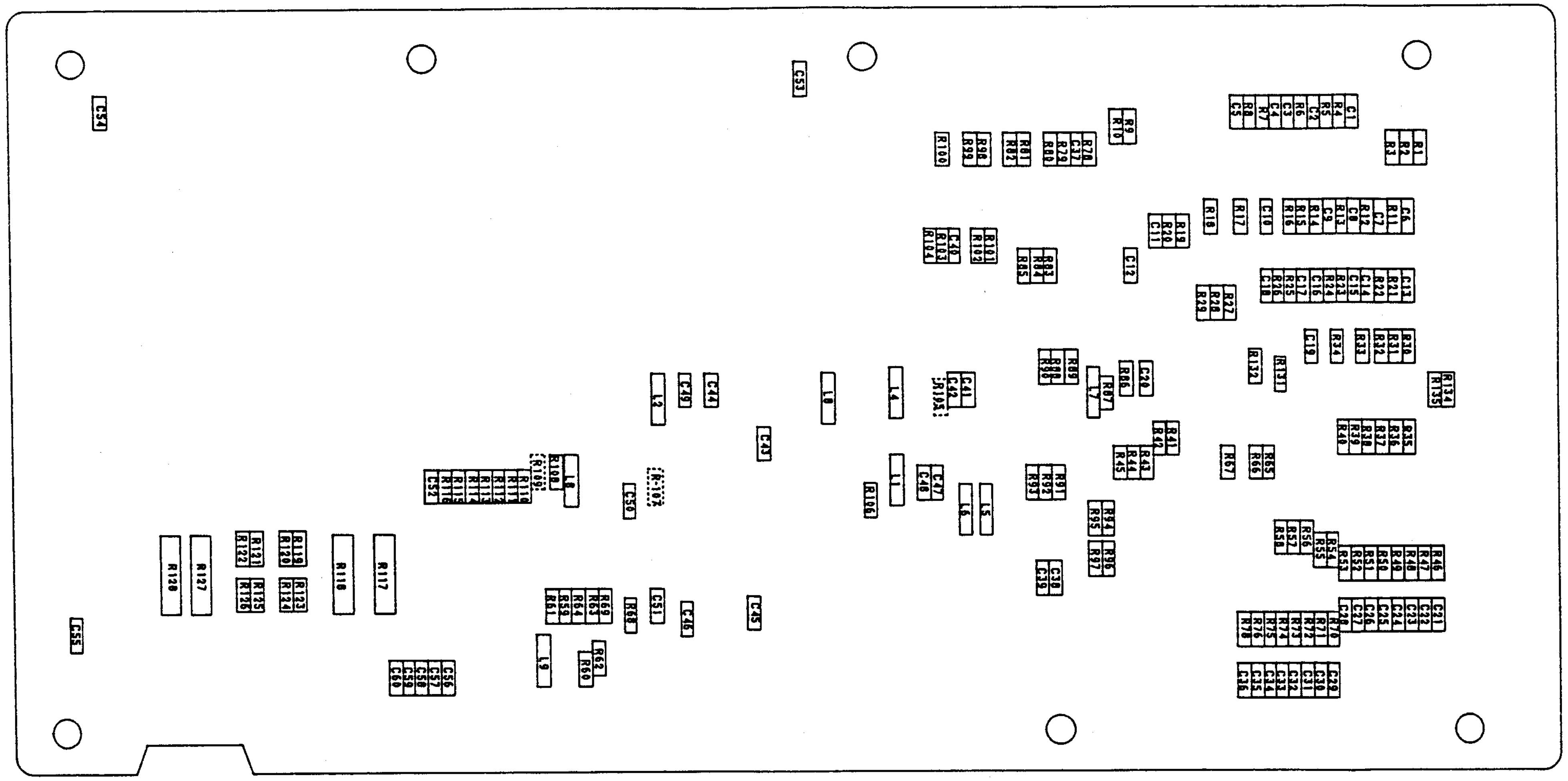

R202 OR R203
23.5 mm OR LESS
PCB

Figure 6-33 G8ESQA PCB Assembly (Component Side)


C54
C53
R100
R9
R10
R1
R2
R3
R18
R17
C10
C12
R132
R131
C19
R134
R135
L2
C49
C44
L8
L4
C43
C50
L1
R106
L6
L5
R67
C38
C39
C55
R128
R127
R118
R117
R68
C51
C46
C45
L9
R62
R60

NOTE: R43, R44, R92, R105, R107, R109 ARE NOT MOUNTED.

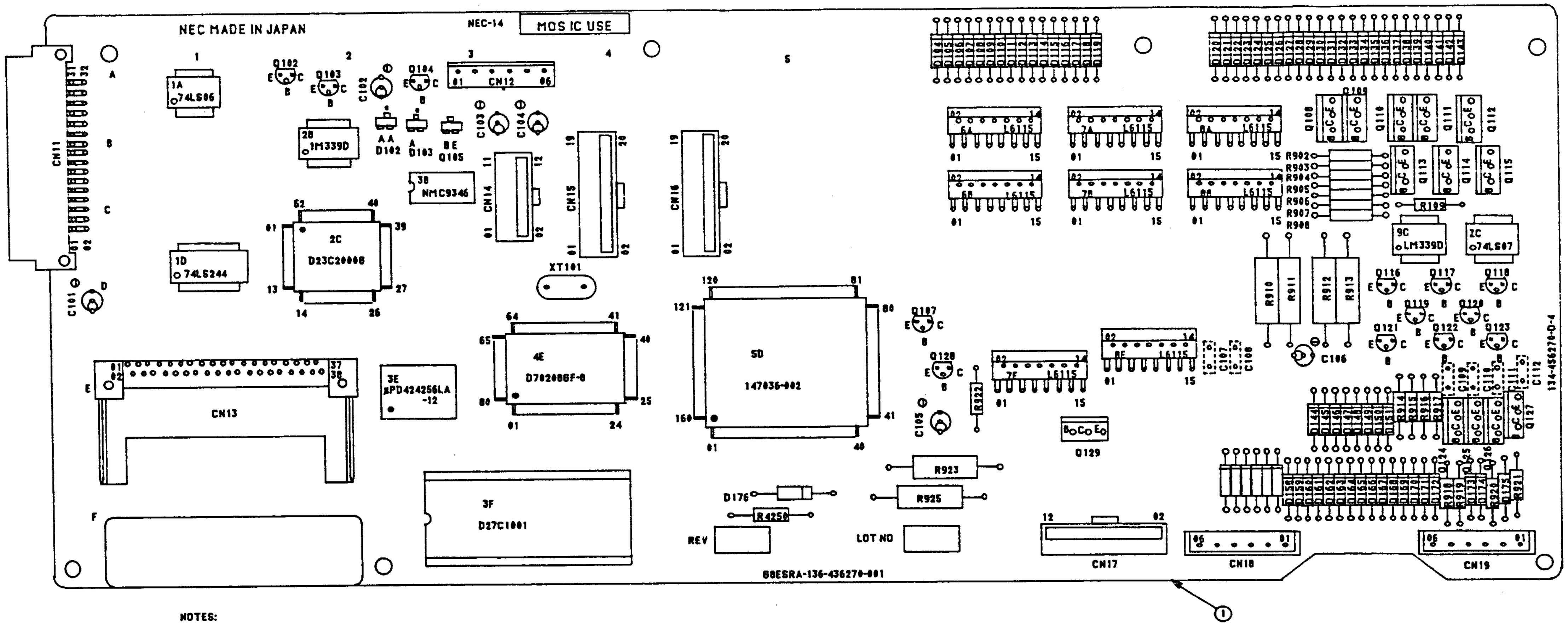
Figure 6-33 G8ESQA PCB Assembly (Solder Side)

G8ESRA PCB Assembly (136-436270-001-A) -1/2

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
4E	D70208GF-8-3B9	802-140236-103-A	1
5E	147036-002	802-147036-002-A	1
3F	EP-ROM Rework	136-218768-001-A	1
2C	23C2000G-F43	802-140874-043-A	1
3E	4C256L-10	802-140494-210-A	1
3B	9346	802-140501-001-A	1
1A	DM7406MR	808-861475-001-A	1
ZC	DM7407MR	808-861475-002-A	1
1D	SN74LS244DWR	808-961475-003-A	1
2B, 9C	LM339DR	808-861475-004-A	2
6A, 6B, 7A, 7B, 7E 8A, 8B, 8E	L6115 (FET)	808-861475-005-A	8
Q108-Q115, Q124-Q127,	TIP135	808-861475-006-A	12
Q104	BC636	808-861475-007-A	1
Q102, Q103, Q116-Q123, Q128	BC337	808-861475-008-A	11
Q107	BC635	808-861475-009-A	1
Q105	BC856/T1	808-861475-010-A	1
Q129	BD678	808-861475-011-A	1
D104-D123, D126, D127, D130, D133, D136-D151, D154-D161, D164-D176	BYD73D	808-861475-012-A	61
D102	BAV70/T1	808-861475-013-A	1
D103	BZX84-C3V3/T1	808-861475-014-A	1
D124, D125, D128, D129, D131, D132, D134, D135	RD6.8FB	802-230014-021-0	8
D152, D153, D162, D163	RD24FB	802-230014-047-0	4
C1-C5, C21-C36, C47	CCC10CH1H101J-T	802-410072-049-A	22
C41, C42	CCC10CH1H300J-T	802-410072-036-A	2
C51	CCC10CH1H331J-T	802-410072-061-A	1
C6-C9, C13-C18, C56, C70, C76	CKC10B1H102K-T	802-410073-025-A	18
C67-C69	CKC10B1H222K-T	802-410073-033-A	3
C54, C57-C59	CKC10B1H333K-T	802-410073-061-A	4
C10-C12, C19, C20, C37-C40, C48, C60-C66	CKC10F1E104Z-T	802-410073-473-A	17
C101-C103, C105	T-CEK16V22µF	808-935300-111-A	4
C104, C106	03628229	808-861475-023-A	2
R155-R158	RC11 10R	808-861475-024-A	4
R41-R45, R47-R82, R88, R93-R96, R100-R104, R108, R124-R129	RC11 100R	808-861475-025-A	58
R89	RC11 180R	808-861475-026-A	1
R87	RC11 330R	808-861475-027-A	1
R83	RC11 470R	808-861475-028-A	1
R92	RC11 620R	808-861475-029-A	1
R1, R2, R106	RC11 680R	808-861475-030-A	3

G8ESRA PCB Assembly (136-436270-001-A) -2/2

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
R32	RC11 910R	808-861475-031-A	1
R4-R6, R8, R9, R112, R141-R145, R150-R152, R169-R172	RC11 1K	808-861475-032-A	18
R119	RC11 1K2	808-861475-033-A	1
R34, R110	RC11 1K3	808-861475-034-A	2
R14	RC11 1K5	808-861475-035-A	1
R199	RC11 1K6	808-861475-036-A	1
R111	RC11 2K4	808-861475-037-A	1
R109	RC11 2K7	808-861475-038-A	1
R33	RC11 3K6	808-861475-039-A	1
R3, R16-R21, R26-R31, R35-R39, R84, R105 R107, R113, R130, R132, R136, R137, R149, R164, R166-R168, R173-R196, R224-R231	RC11 4K7	808-861475-040-A	63
R10-R13, R22, R24, R25, R46, R85, R86, R91, R97, R98, R115, R122, R153, R154, R159-R163, R165, R197, R198	RC11 10K	808-861475-041-A	25
R120, R131, R140, R146	RC11 11K	808-861475-042-A	4
R121, R134, R139, R148	RC11 43K	808-861475-043-A	4
R23, R90	RC11 47K	808-861475-044-A	2
R133, R135, R138, R147	RC11 68K	808-861475-045-A	4
R15	RC11 100K	808-861475-046-A	1
R40	RC11 1M	808-861475-047-A	1
R922	SFR16S 18K	808-861475-048-A	1
R924	SFR16T 300R	808-861475-049-A	1
R920, R921	PR01 12R	808-861475-057-A	2
R918, R919	PR01 51R	808-861475-051-A	2
R902-R909	PR01 1K1	808-861475-052-A	8
R914-R917	PR01 2K7	808-861475-053-A	4
R910-913	PR03 1R	808-861475-054-A	4
R923, R925	PR03 30R	808-861475-055-A	2
L1-L9	BLM41A 04PT-T	802-530167-002-A	9
XT101	CSA16.00MX	808-970112-009-A	1
CN11	PCN10-32P-2.54DS	808-955239-104-A	1
CN14, CN17	FH11-12S-1.27DSA	808-955311-012-A	2
CN12	VR06	808-955247-806-A	1
CN13	ICP-H38	808-720076-138-0	1
CN15, CN16	FH11-20S-1.27DSA	808-955311-020-A	2
CN18	HR06S Black	808-955247-563-A	1
CN19	HR06S Natural	808-955247-561-A	1
(1)	G8ESR PWB	136-456270-E	1
(2E)	Insulation Sheet	136-852765-001-A	1
(3F)	42000-3230	808-861475-056-A	1


NEC MADE IN JAPAN
NEC-14
MOS IC USE
1A 74LS06
2B 1M339D
3B NMC9346
2C D23C2000B
1D 74LS244
3E µPD424256LA -12
4E D70208GF-8
3F D27C1001
5D 147036-002
XT101
CN11
CN12
CN13
CN14
CN15
CN16
CN17
CN18
CN19
Q102
Q103
Q104
Q105
D102
D103
C101
C102
C103
C104
C105
C106
Q107
Q128
Q129
R922
R923
R925
R425
D176
REV
LOT NO
9C LM339D
ZC 74LS07
R910
R911
R912
R913
Q116
Q117
Q118
Q119
Q120
Q121
Q122
Q123
6A
7A
8A
6B
7B
8B
7F
8F
L6115
G8ESRA-136-436270-001
134-456270-D-4
①

NOTES:

1. 3F IS MOUNTED WHITH IC SOCKET ON THE PCB.

2. C101 TO C106 SHALL BE INHIBITED FROM CLEANING WITH TRICHLOROETHANE.

3. C103 SHALL BE MOUNTED AS BELOW.

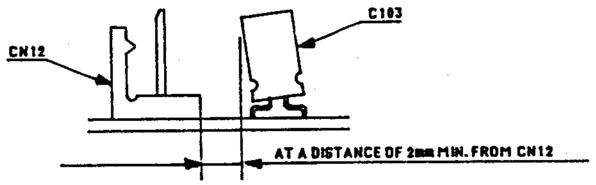
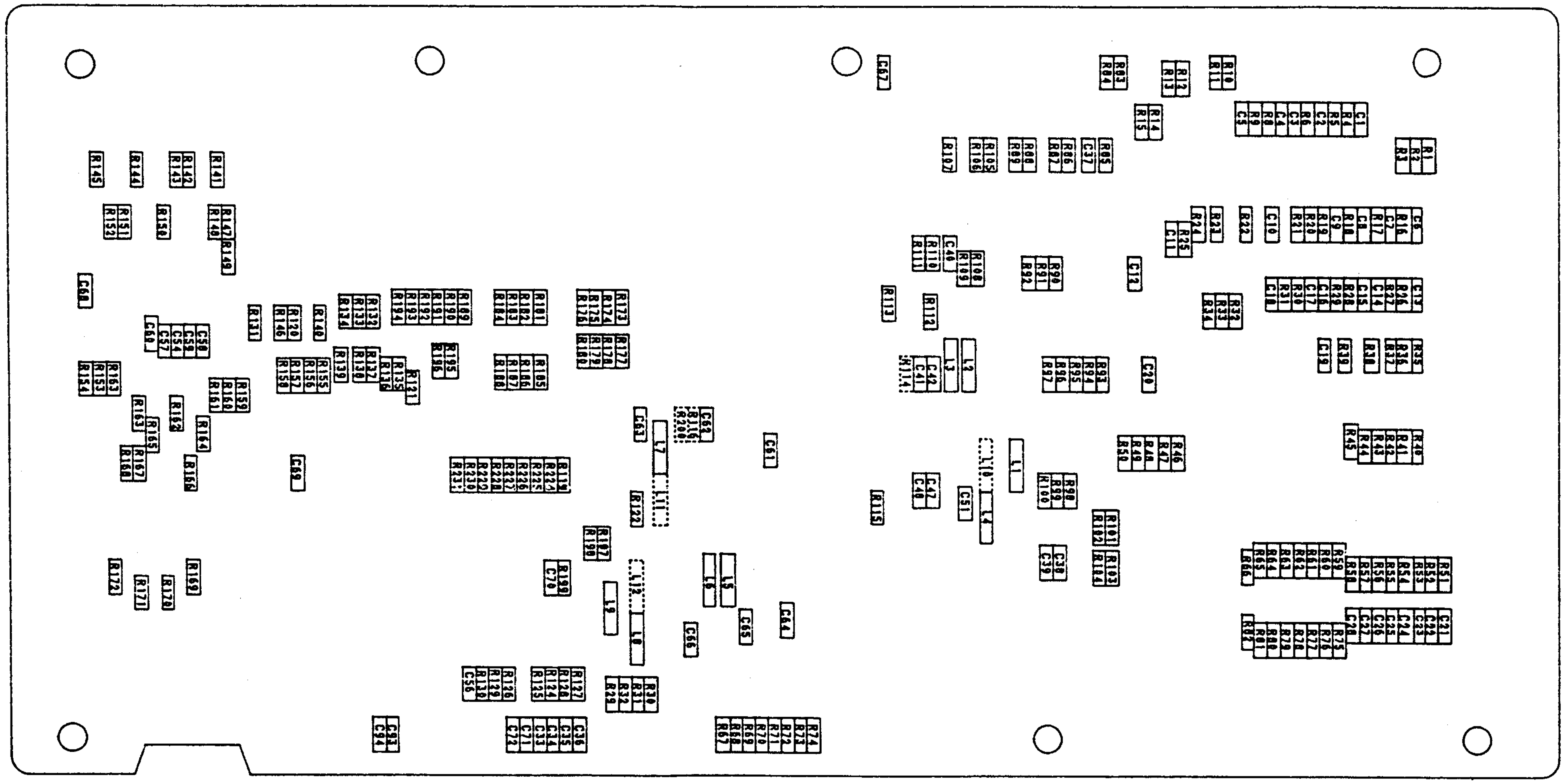

C103
CN12
AT A DISTANCE OF 2mm MIN. FROM CN12

Figure 6-34 G8ESRA PCB Assembly (Component Side)



NOTE: FOLLOWING PARTS ARE NOT MOUNTED ON THIS PCB.
R99, R114, R116, R200, L10, L11, L12

Figure 6-34 G8ESRA PCB Assembly (Solder Side)

G8EESTA PCB Assembly (136-4367272-001-A)

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
C1, C3-C5	T-MC02F1H104Z	808-935500-002-A	4
C2, C6	T-MC02H1H101K	808-935500-010-A	2
CN42	HR-045, Natural	808-955247-541-A	1
CN44	HR-0125, Natural	808-955247-591-A	1
CN41	PCN10B-32S-2.54DS	808-955329-002-A	1
CN45	Centronics Connector Assembly	136-843453-001-A	1
J1, J2, J4, J6	Jumper Wire (16P)	133-381000-016-A	4
J3, J8	Jumper Wire (12P)	133-381000-012-A	2
J5, J7	Jumper Wire (8P)	133-381000-008-A	2
(1)	G8EST PCB	136-456272-D	1

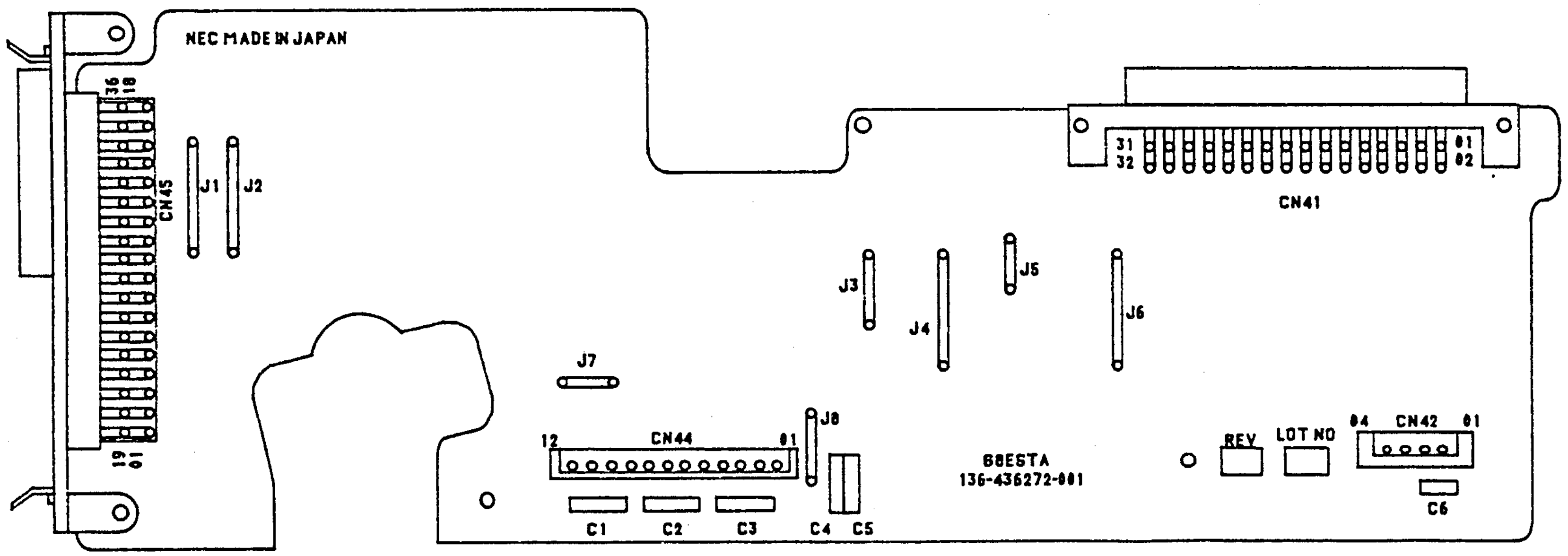

NEC MADE IN JAPAN
36
18
CN45
19
01
J1
J2
31
32
01
02
CN41
J3
J4
J5
J6
J7
J8
12
CN44
01
C1
C2
C3
C4
C5
G8ESTA
136-436272-001
REV
LOT NO
04
CN42
01
C6

Figure 6-35 G8ESTA PCB Assembly

G8ESVA PCB Assembly (136-436274-001-A)

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
C1, C3-C5	T-MC02F1H104Z	808-935500-002-A	4
C2, C6	T-MC02H1H101K	808-935500-010-A	2
CN42	HR-045, Natural	808-955247-541-A	1
CN44	HR-0125, Natural	808-955247-591-A	1
CN41	PCN10B-32S-2.54DS	808-955329-002-A	1
CN45	Centronics Connector Assembly	136-843453-001-A	1
J1, J2, J4, J6	Jumper Wire (16P)	133-381000-016-A	4
J3, J8	Jumper Wire (12P)	133-381000-012-A	2
J5, J7	Jumper Wire (8P)	133-381000-008-A	2
(1)	G8ESV PCB	136-456274-D	1

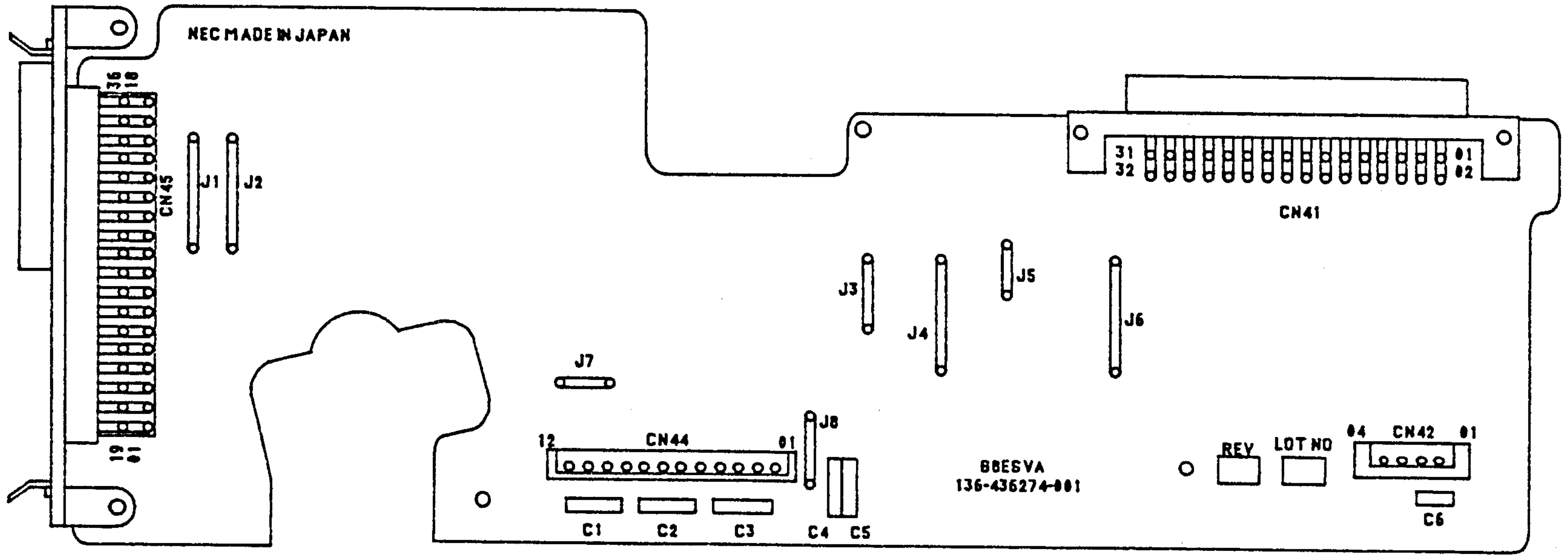

NEC MADE IN JAPAN
36
18
CN45
19
01
J1
J2
J3
J4
J5
J6
J7
J8
12
CN44
01
C1
C2
C3
C4
C5
G8ESVA
136-436274-001
REV
LOT NO
04
CN42
01
C6
31
32
01
02
CN41

Figure 6-36 G8ESVA PCB Assembly

RS-232C Kit (808-217741-001-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Serial I/F Case (U)	136-846899-001-A	1
2	Serial I/F Case (L)	136-846900-001-A	1
3	Set Screw	136-846884-001-A	2
4	G8ESW PCB Assembly (See Figure 6-38 for breakdown)	136-436275-A	1
201	Screw, PCBTSx3x8x3GF	808-802172-308-0	4
202	Screw, PCBTSx3x12x3GF	808-802172-312-0	2

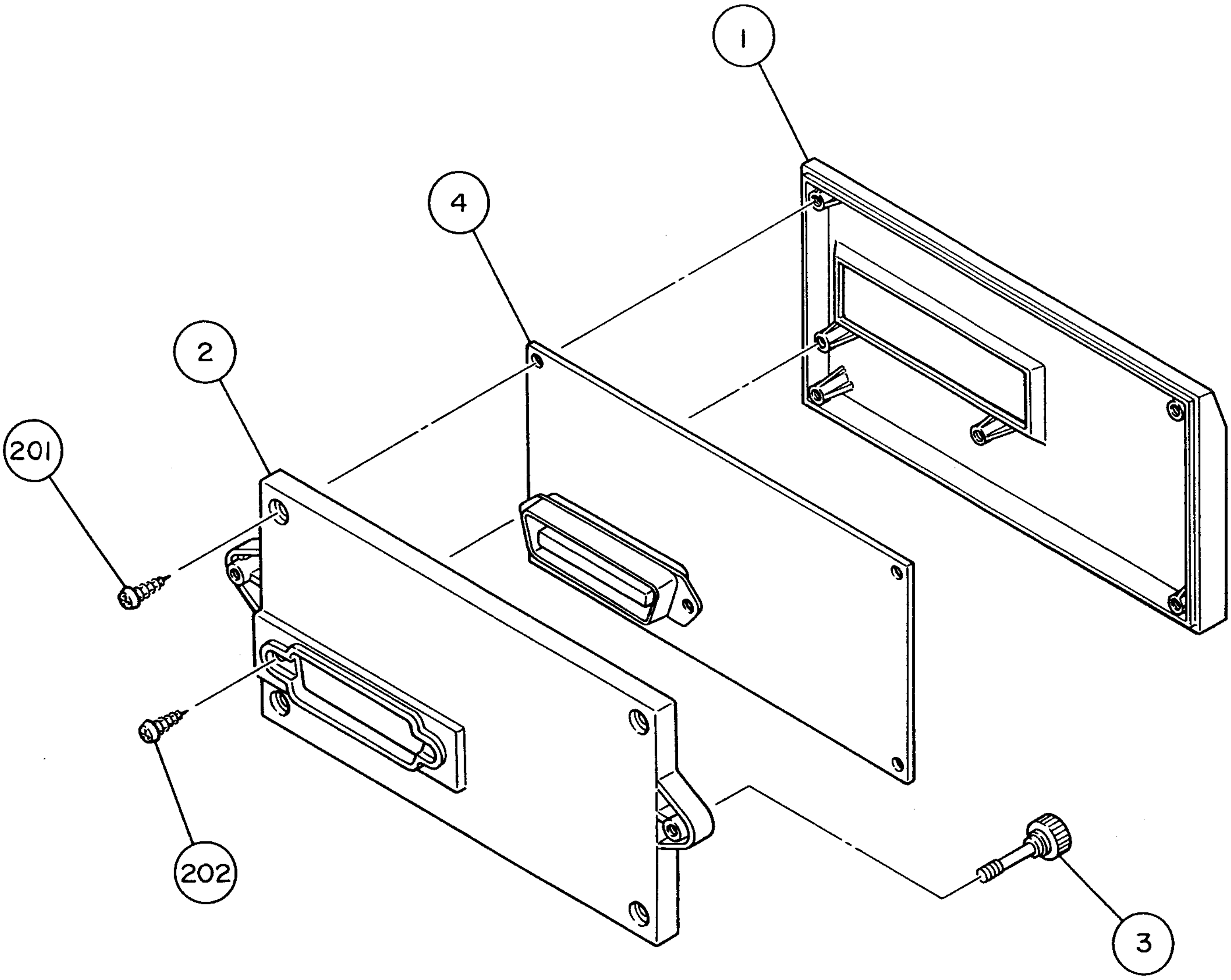


Figure 6-37 RS-232C Kit

G8ESW PCB Assembly (136-436275-A)

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
Z1	D78C11G-251	802-140628-251-A	1
Z2	74LS00	808-907000-001-A	1
Z3	74LS373	808-907373-001-A	1
Z4	464 (150)	808-919407-150-A	1
Z5	D4712A	802-180453-002-A	1
D1	1S953-TB	802-210018-002-0	1
R1	T-RF07Q203G	808-930300-017-A	1
R2	T-RF07Q105G	808-930300-074-A	1
RM1	RRS09BL472J(L)	802-190033-908-A	1
L1-L9	ZBF503D-00	802-840043-002-A	9
C6, C7	FMC02CH1H300K	808-935501-006-A	2
C5, C8, C9, C11, C12 C14,C15	FMC02F1H104Z	808-935500-002-A	6
C1-C4, C10, C13	T-CE16V22µF	808-935300-084-A	6
CM1, CM2	IHC4-331KA	808-935569-001-A	2
CM3	IHC4-222KA	808-935569-002-A	1
XT1	CSA 7.37 MT	808-970112-011-A	1
CN55	57-10360-13	802-710037-423-A	1
CN56	Serial Connector Assembly	136-846428-001-A	1
J1	Z-149-3P	808-955125-022-A	1
(1)	G8ESW PCB	136-456274-D	1
(22)	Spacer	136-846431-001-A	2

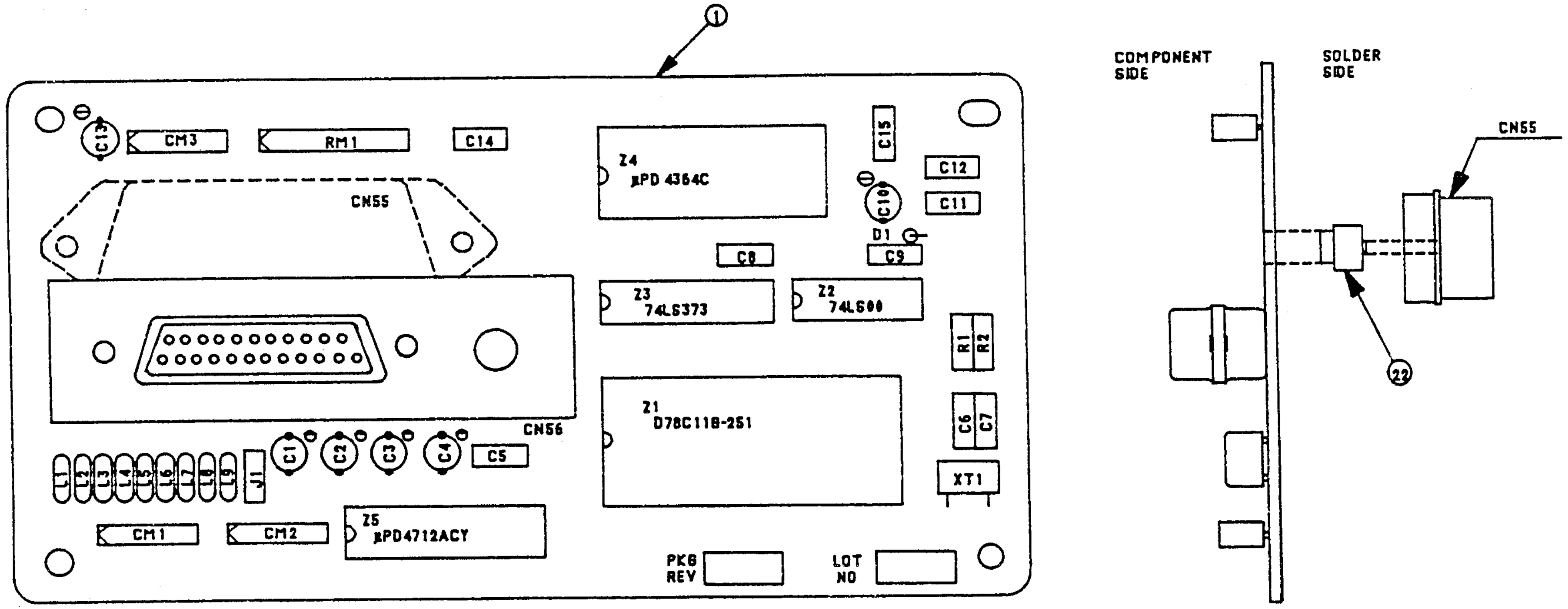

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Figure 6-38 G8ESW PCB Assembly

Pull Tractor Unit (S) (136-218470-001-A)

ITEM	DESCRIPTION	PART NUMBER	QTY
1	Side Frame (R) Subassembly	136-789127-001-A	1
2	Side Frame (L) Subassembly	136-789127-002-A	1
3	Lock Spring	136-789132-A	2
4	Idle Gear 1	136-789143-A	1
5	Idle Gear 2	136-789144-A	1
6	Center Guide	136-789138-A	1
7	Tractor Gear	136-789140-A	1
8	Drive Shaft (S)	136-789141-001-A	1
9	Hold Shaft (S)	136-789142-001-A	1
10	Tractor Knob	136-789162-001-A	1
11	Clutch Spring	136-789151-A	1
12	Bushing	136-789152-A	2
13	Paper Net (S)	136-789154-001-A	1
14	Rubber Cap	136-811830-A	1
15	Side Cover (R)	136-789155-001-A	1
16	Side Cover (L)	136-789155-002-A	1
17	Tractor (R) Assembly	808-802351-001-A	1
18	Tractor (L) Assembly	808-802351-002-A	1
19	Frame Stay (SS)	136-789139-001-A	1
20	Frame Stay (S)	136-789139-002-A	1
21	Tractor Guide (R)	136-789150-001-A	1
22	Tractor Guide (L)	136-789150-002-A	1
23	Washer	136-789149-A	1
201	E Ring E-42	803-010030-042-0	1
202	E Ring E-50	803-010030-050-0	1
203	Screw, PL-CPIMSx4x6x15BF	805-300004-006-0	2
204	Screw, COFIMSx3x6x15BF	805-020003-006-0	4
205	Screw, SL-CPIMSx3x8x15BF	805-310003-008-0	4

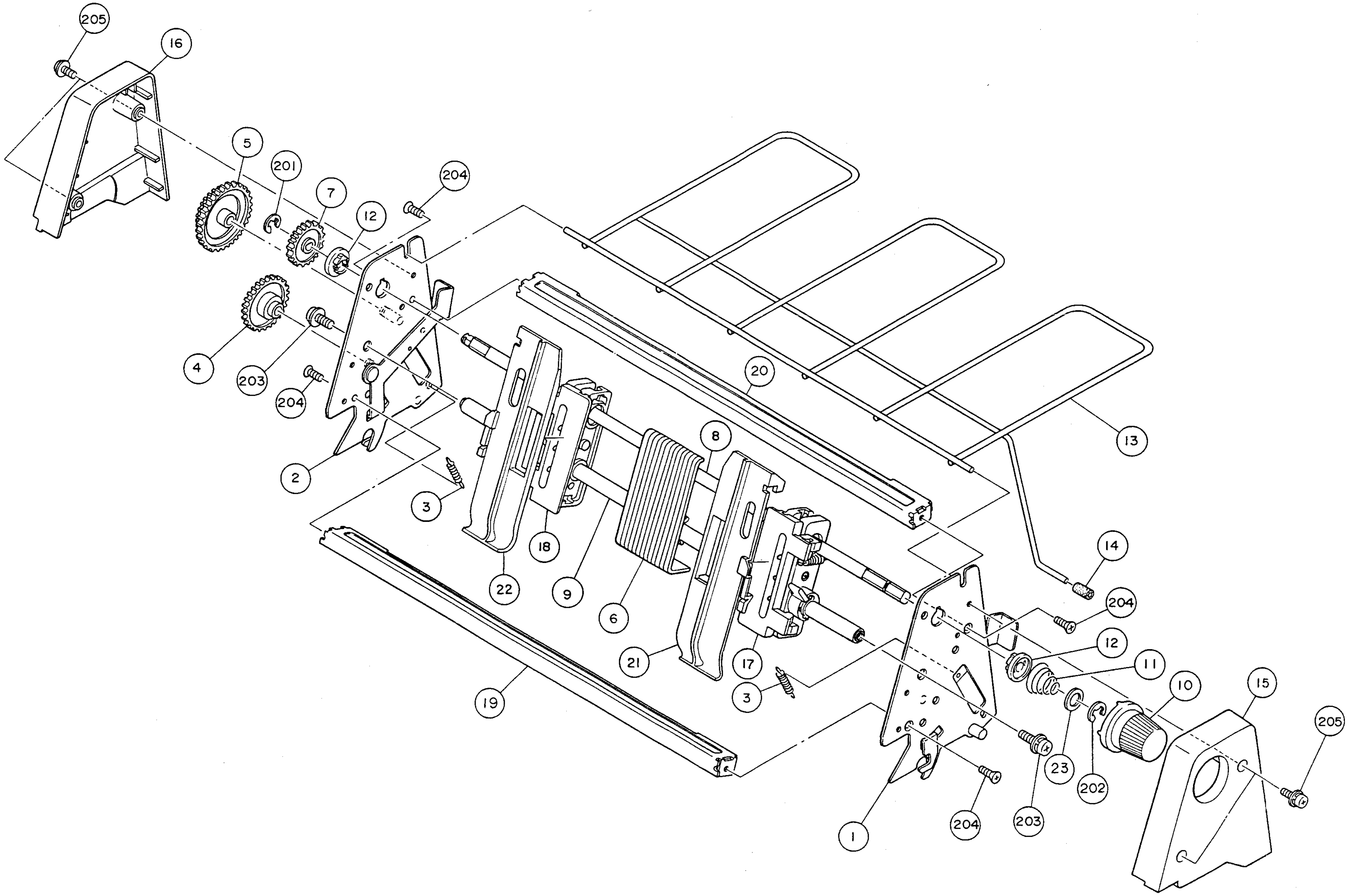
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Figure 6-39 Pull Tractor Unit (S)

Pull Tractor Unit (L) (136-218470-501-A)

ITEM	DESCRIPTION	PART NUMBER	QTY
1	Side Frame (R) Subassembly	136-789127-001-A	1
2	Side Frame (L) Subassembly	136-789127-002-A	1
3	Lock Spring	136-789132-A	2
4	Idle Gear 1	136-789143-A	1
5	Idle Gear 2	136-789144-A	1
6	Center Guide	136-789138-A	1
7	Tractor Gear	136-789140-A	1
8	Drive Shaft (L)	136-789141-501-A	1
9	Hold Shaft (L)	136-789142-501-A	1
10	Tractor Knob	136-789162-001-A	1
11	Clutch Spring	136-789151-A	1
12	Bushing	136-789152-A	2
13	Paper Net (L)	136-789154-501-A	1
14	Rubber Cap	136-811830-A	1
15	Side Cover (R)	136-789155-001-A	1
16	Side Cover (L)	136-789155-002-A	1
17	Tractor (R) Assembly	808-802351-001-A	1
18	Tractor (L) Assembly	808-802351-002-A	1
19	Frame Stay (LS)	136-789139-501-A	1
20	Frame Stay (L)	136-789139-502-A	1
21	Tractor Guide (R)	136-789150-001-A	1
22	Tractor Guide (L)	136-789150-002-A	1
23	Washer	136-789149-A	1
201	E Ring E-42	803-010030-042-0	1
202	E Ring E-50	803-010030-050-0	1
203	Screw, PL-CPIMSx4x6x15BF	805-300004-006-0	2
204	Screw, COFIMSx3x6x15BF	805-020003-006-0	4
205	Screw, SL-CPIMSx3x8x15BF	805-310003-008-0	4

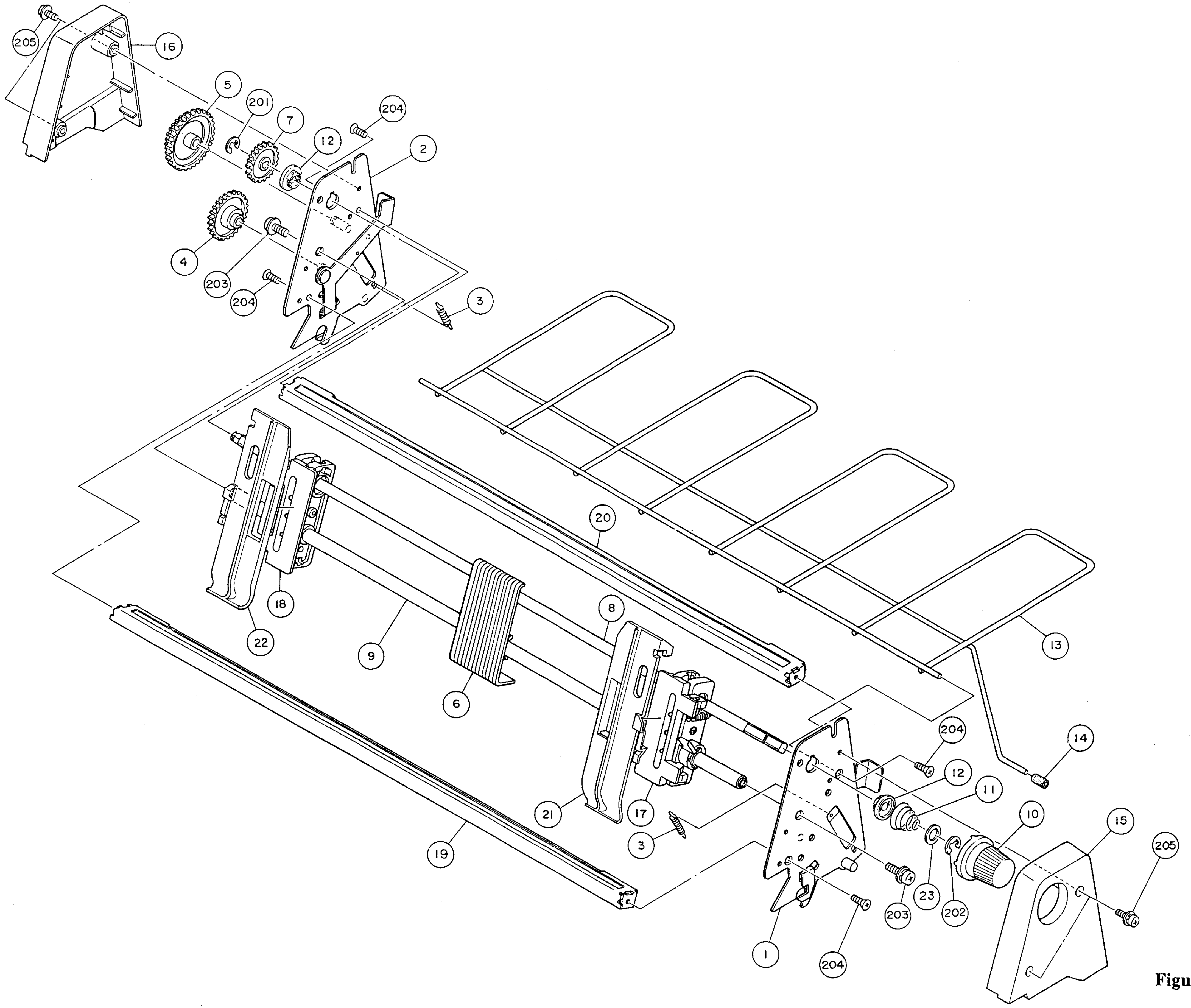
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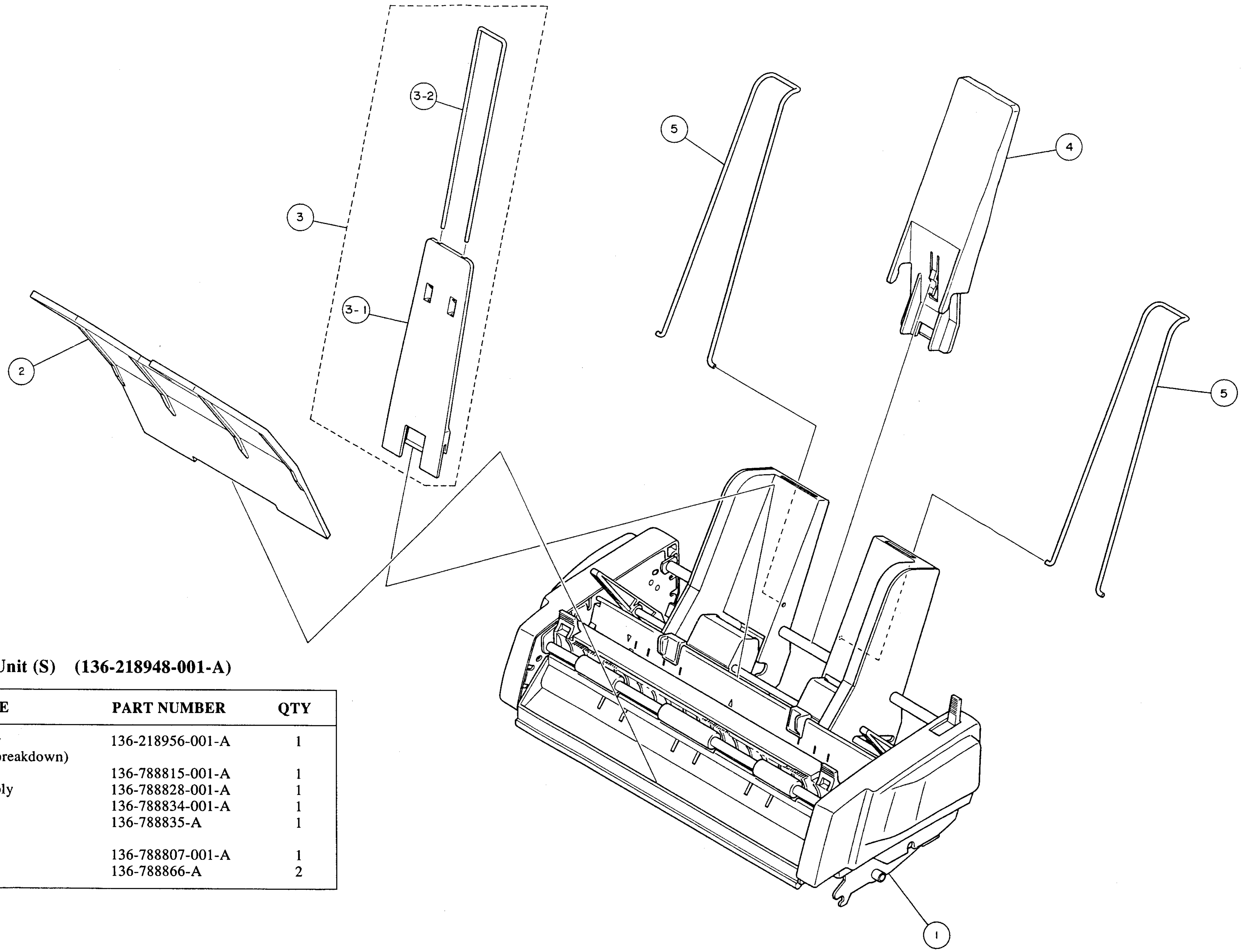
Figure 6-40 Pull Tractor Unit (L)



1 Bin Sheet Feeder Unit (S) (136-218948-001-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Main Unit S Assembly (See Figure 6-43 for breakdown)	136-218956-001-A	1
2	Upper Stacker	136-788815-001-A	1
3	Stacker Guide Assembly	136-788828-001-A	1
3-1	Stacker Guide	136-788834-001-A	1
3-2	Paper Guide	136-788835-A	1
4	Center Guide	136-788807-001-A	1
5	Hopper Guide Bar	136-788866-A	2

Figure 6-41 1 Bin Sheet Feeder Unit (S)

1 Bin Sheet Feeder Unit (L) (136-218948-501-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Main Unit L Assembly (See Figure 6-44 for breakdown)	136-218956-501-A	1
2	Upper Stacker	136-788815-001-A	1
3	Stacker Guide Assembly	136-788828-001-A	1
3-1	Stacker Guide	136-788834-001-A	1
3-2	Paper Guide	136-788835-A	1
4	Center Guide	136-788807-001-A	1
5	Hopper Guide Bar	136-788866-A	2

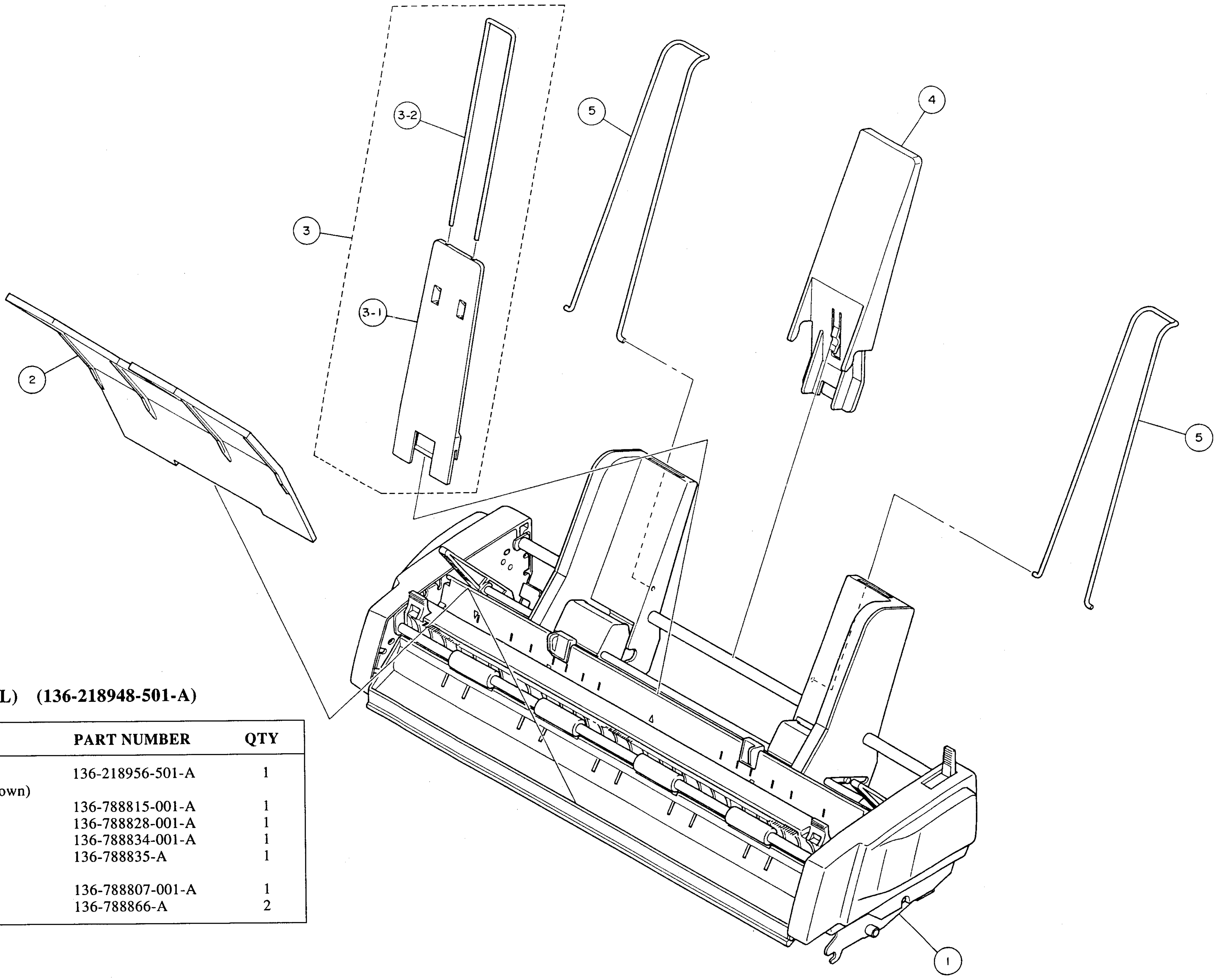


Figure 6-42 1 Bin Sheet Feeder Unit (L)

Main Unit S Assembly (136-218956-001-A) - 1/2

ITEM	PART NAME	PART NUMBER	QTY
1	Unit Sub (S) Assembly (See Figure 6-45 for breakdown)	136-788858-001-A	1
2	Middle Guide S Assembly	136-788871-001-A	1
2-1	Middle Guide (S)	136-788860-001-A	1
2-2	Side Guide	136-788849-001-A	1
2-3	Side Guide	136-788849-002-A	1
3	Eject Guide S Assembly	136-788870-001-A	1
3-1	Eject Guide (S) Subassembly	136-789409-001-A	1
3-2	Stacker Roller S	136-788903-A	1
3-3	Bushing D	136-788901-001-A	1
3-4	Bushing D	136-788901-002-A	1
3-5	Eject Roller Gear	136-788843-A	1
3-201	E Ring (E-37)	803-010030-037-A	1
4	Bottom Stacker S Assembly	136-788869-001-A	1
4-1	Bottom Stacker (S) Subassembly	136-789410-001-A	1
4-2	Front Stay S	136-788905-A	1
4-201	Screw, #2CBTSx3x6x3GF	805-230103-006-0	2
5	Rear Stacker (S) Assembly	136-788822-001-A	1
5-1	Rear Stacker	136-788823-001-A	1
5-2	E.S.D Brush	136-788824-001-A	1
5-201	Screw, PL-CPIMSx3x5x15BF	805-300003-005-0	2
6	Hopper Unit Assembly	136-788825-001-A	1
6-1	Hopper Base	136-788791-001-A	1
6-2	Hopper Base	136-788791-002-A	1
6-3	Hopper Cover	136-788797-001-A	1
6-4	Hopper Cover	136-788797-002-A	1
6-5	Separator	136-788792-001-A	1
6-6	Separator	136-788792-002-A	1
6-7	Hopper Plate Assembly	136-788794-001-A	1
6-8	Hopper Plate Assembly	136-788794-002-A	1
6-9	Separator Spring	136-788793-001-A	2
6-10	Pressure Spring	136-788861-002-A	2
6-11	Select Arm	136-788798-A	2
6-12	Lock Piece	136-787516-001-A	2
6-13	Hopper Release Bar	136-788817-001-A	1
6-14	Hold Shaft	136-788809-001-A	1
7	Feed Roller Gear Assembly	136-788808-A	1
8	Clutch Assembly	136-788800-001-A	1
8-1	Top Gear Assembly	136-788801-001-A	1
8-2	Middle disk Assembly	136-788804-A	1
8-3	Base Gear 3	136-788889-A	1

Main Unit S Assembly (136-218956-001-A) - 2/2

ITEM	PART NAME	PART NUMBER	QTY
9	Pick Roller Shaft	136-788876-001-A	1
10	Eject Roller 2 (S)	136-788872-001-A	1
11	Clutch Holder Assembly	136-789408-A	1
12	Idle Gear A	136-788837-A	1
13	Idle Gear B	136-788838-A	1
14	Idle Gear C	136-788880-A	1
15	Idle Gear D	136-788836-A	1
16	Idle Gear E	136-788910-A	1
17	Idle Gear G	136-788836-A	1
18	Eject Roller Gear	136-788843-A	1
19	Pick Roller Gear	136-788841-A	1
20	Release Lever	136-788814-001-A	1
21	Release Lever	136-788814-002-A	1
22	Pick Roller	136-788811-001-A	1
23	Pick Roller	136-788811-002-A	1
24	Select Lever	136-788799-A	1
25	Eject Spring	136-788863-001-A	2
26	Hold Bushing	136-788818-A	6
27	Side Cover L	136-788884-001-A	1
28	Side Cover R	136-788885-001-A	1
29	Idle Gear F	136-788912-A	1
30	Nut Washer	136-789407-A	1
201	Screw, PL-CPIMSx3x6x15BF	805-300003-006-0	6
202	Screw, SL-CPIMSx3x10x15BF	805-310003-010-0	2
203	Screw, PL-CPIMSx3x8x15BF	805-300003-008-0	1
204	E Ring (E-32)	803-010030-032-0	3
205	E Ring (E-40)	803-010030-040-0	1

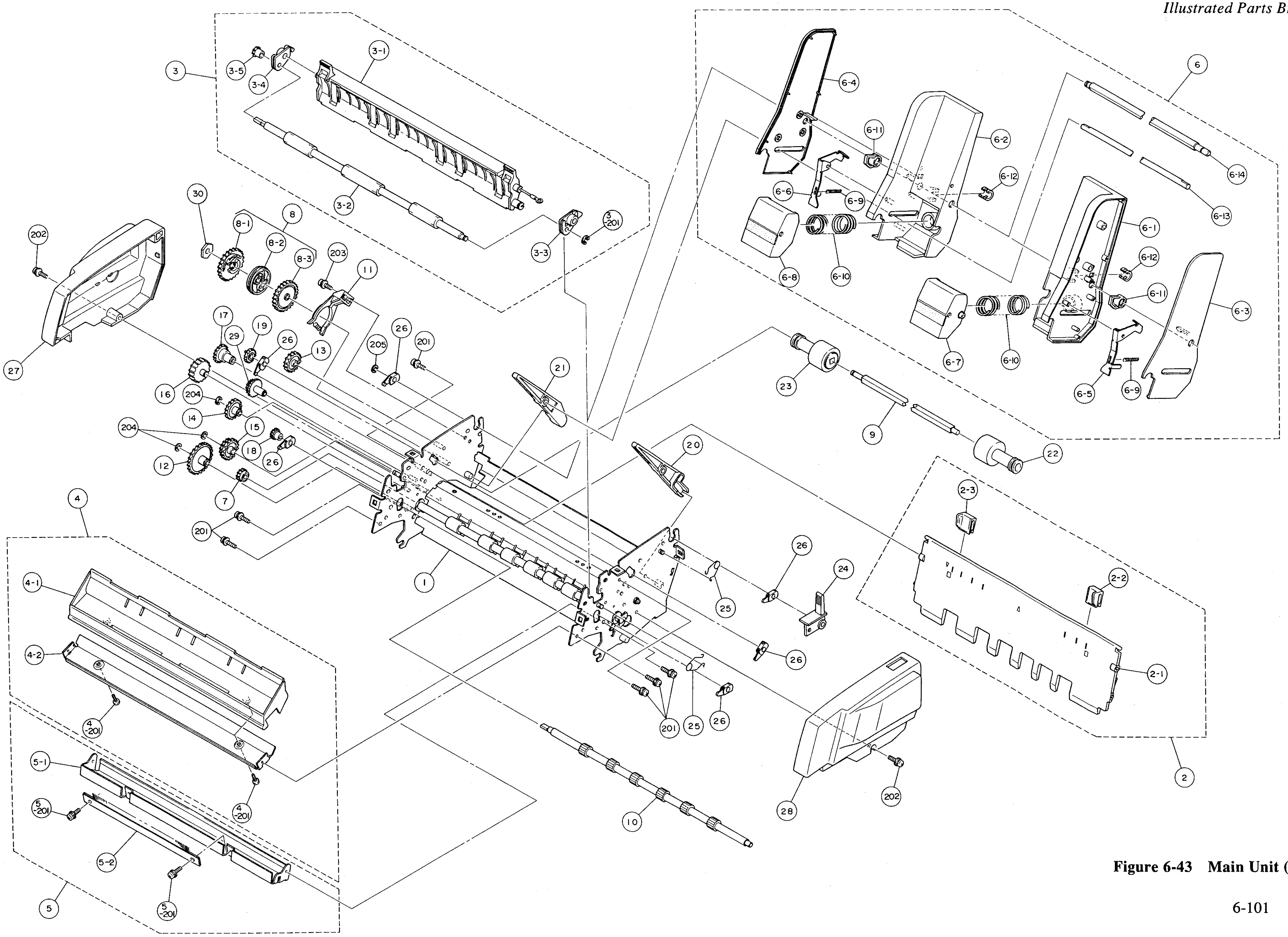

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Figure 6-43 Main Unit (S) Assembly

Main Unit L Assembly (136-218956-501-A) - 1/2

ITEM	PART NAME	PART NUMBER	QTY
1	Unit Sub (L) Assembly (See Figure 6-46 for breakdown)	136-788858-501-A	1
2	Middle Guide L Assembly	136-788871-501-A	1
2-1	Middle Guide (L)	136-788859-501-A	1
2-2	Side Guide	136-788849-001-A	1
2-3	Side Guide	136-788849-002-A	1
3	Eject Guide (L) Assembly	136-788870-501-A	1
3-1	Eject Guide (L) Subassembly	136-789409-501-A	1
3-2	Stacker Roller(L)	136-788902-A	1
3-3	Bushing D	136-788901-001-A	1
3-4	Bushing D	136-788901-002-A	1
3-5	Eject Roller Gear	136-788843-A	1
3-201	E Ring (E-37)	803-010030-037-A	1
4	Bottom Stacker L Assembly	136-788869-501-A	1
4-1	Bottom Stacker (L) Subassembly	136-789410-501-A	1
4-2	Front Stay L	136-788904-A	1
4-201	Screw, #2CBTSx3x6x3GF	805-230103-006-0	3
5	Rear Stacker (L) Assembly	136-788822-501-A	1
5-1	Rear Stacker	136-788823-501-A	1
5-2	E.S.D Brush	136-788824-501-A	1
5-201	Screw, PL-CPIMSx3x5x15BF	805-300003-005-0	2
6	Hopper Unit Assembly	136-788825-501-A	1
6-1	Hopper Base	136-788791-001-A	1
6-2	Hopper Base	136-788791-002-A	1
6-3	Hopper Cover	136-788797-001-A	1
6-4	Hopper Cover	136-788797-002-A	1
6-5	Separator	136-788792-001-A	1
6-6	Separator	136-788792-002-A	1
6-7	Hopper Plate Assembly	136-788794-001-A	1
6-8	Hopper Plate Assembly	136-788794-002-A	1
6-9	Separator Spring	136-788793-001-A	2
6-10	Pressure Spring	136-788861-002-A	2
6-11	Select Arm	136-788798-A	2
6-12	Lock Piece	136-787516-001-A	2
6-13	Hopper Release Bar	136-788817-501-A	1
6-14	Hold Shaft	136-788809-501-A	1
7	Feed Roller Gear Assembly	136-788808-A	1
8	Clutch Assembly	136-788800-001-A	1
8-1	Top Gear Assembly	136-788801-001-A	1
8-2	Middle disk Assembly	136-788804-A	1
8-3	Base Gear 3	136-788889-A	1

Main Unit L Assembly (136-218956-501-A) - 2/2

ITEM	PART NAME	PART NUMBER	QTY
9	Pick Roller Shaft	136-788876-501-A	1
10	Eject Roller 2 (L)	136-788872-501-A	1
11	Clutch Holder Assembly	136-789408-A	1
12	Idle Gear A	136-788837-A	1
13	Idle Gear B	136-788838-A	1
14	Idle Gear C	136-788880-A	1
15	Idle Gear D	136-788836-A	1
16	Idle Gear E	136-788910-A	1
17	Idle Gear G	136-788911-A	1
18	Eject Roller Gear	136-788843-A	1
19	Pick Roller Gear	136-788841-A	1
20	Release Lever	136-788814-001-A	1
21	Release Lever	136-788814-002-A	1
22	Pick Roller	136-788811-001-A	1
23	Pick Roller	136-788811-002-A	1
24	Select Lever	136-788799-A	1
25	Eject Spring	136-788863-001-A	2
26	Hold Bushing	136-788818-A	6
27	Side Cover (L)	136-788884-001-A	1
28	Side Cover (R)	136-788885-001-A	1
29	Idle Gear F	136-788912-A	2
30	Nut Washer	136-789407-A	2
201	Screw, PL-CPIMSx3x6x15BF	805-300003-006-0	6
202	Screw, SL-CPIMSx3x10x15BF	805-310003-010-0	2
203	Screw, PL-CPIMSx3x8x15BF	805-300003-008-0	1
204	E Ring (E-32)	803-010030-032-0	3
205	E Ring (E-40)	803-010030-040-0	1

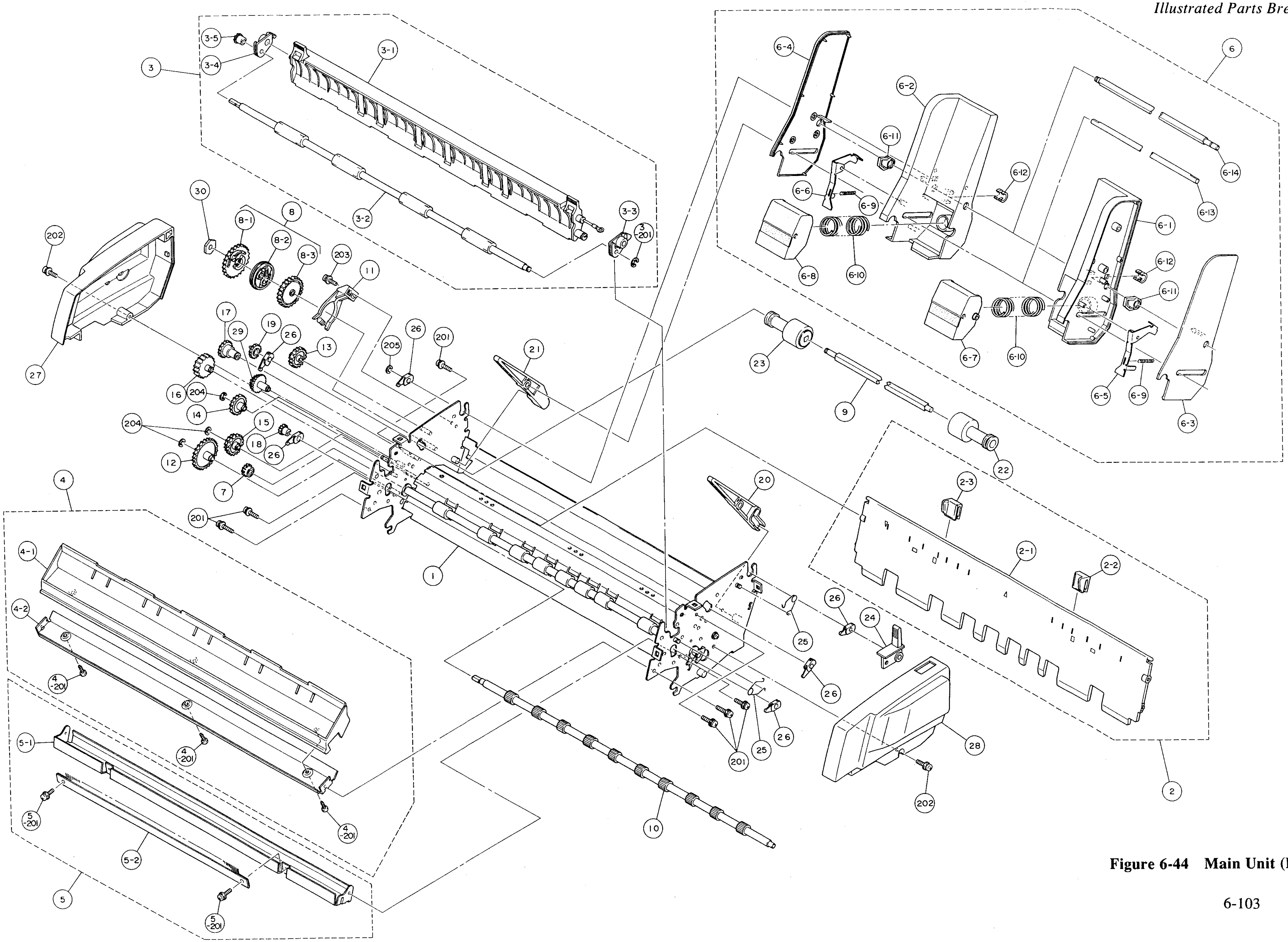
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Figure 6-44 Main Unit (L) Assembly

Unit Sub (S) Assembly (136-788858-001-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Main Frame (S) Assembly	136-788852-001-A	1
2	Feed Roller (S)	136-788892-A	1
3	Pressure Roller (S)	136-788894-A	1
4	Hold Bushing	136-788818-A	2
5	Guide Bushing	136-788907-A	2
6	Back-Up Piece	136-788899-001-A	2
7	Back-Up Spring	136-788821-003-A	2
201	Screw, PL-CPIMSx3x5x15BF	805-300003-005-0	2

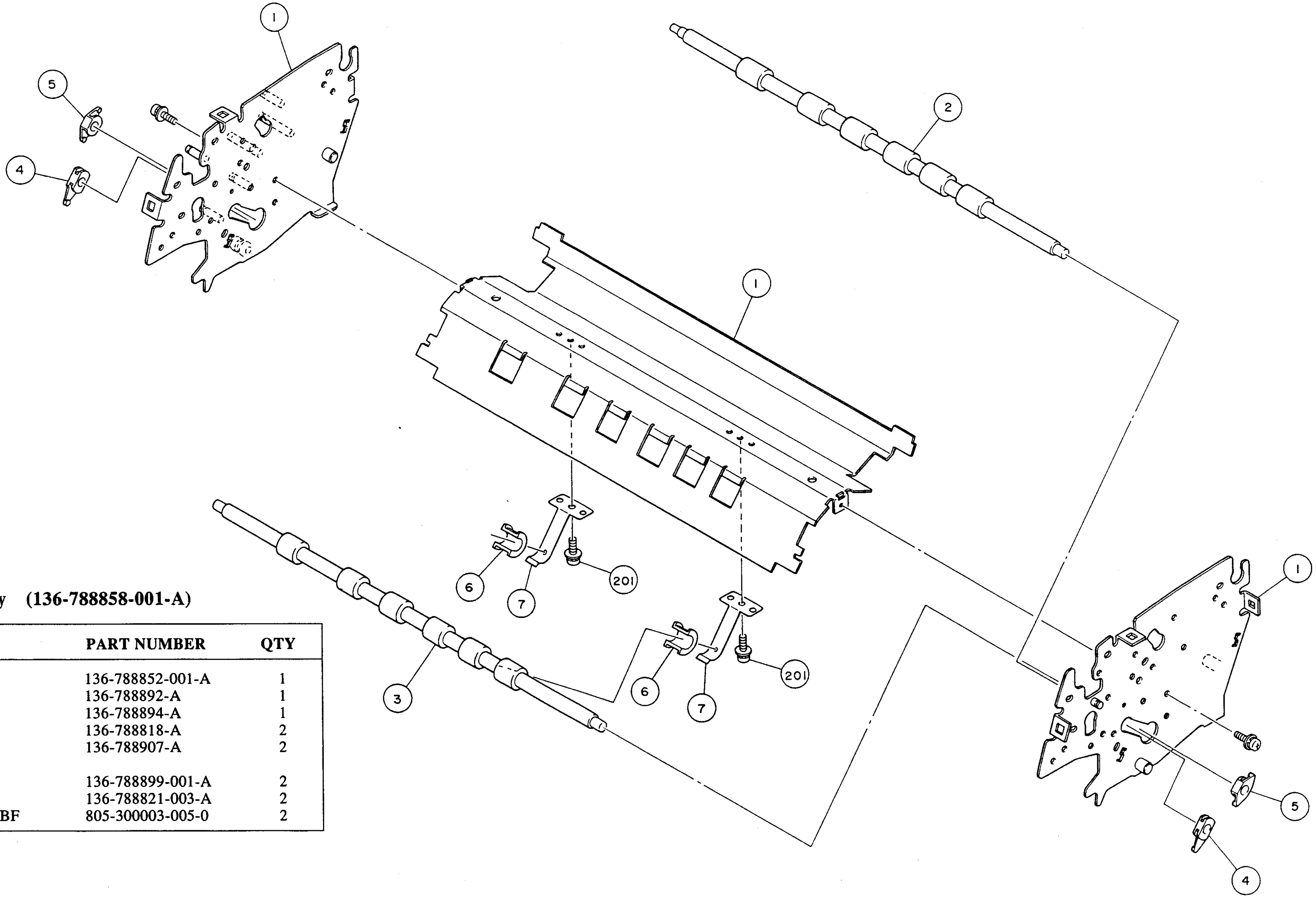


Figure 6-45 Unit Sub (S) Assembly

Unit Sub (L) Assembly (136-788858-501-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Main Frame (L) Assembly	136-788852-501-A	1
2	Feed Roller (L)	136-788893-A	1
3	Pressure Roller (L)	136-788895-A	1
4	Hold Bushing	136-788818-A	2
5	Guide Bushing	136-788907-A	2
6	Back-Up Piece	136-788899-001-A	2
7	Back-Up Spring	136-788821-003-A	2
201	Screw, PL-CPIMSx3x5x15BF	805-300003-005-0	2

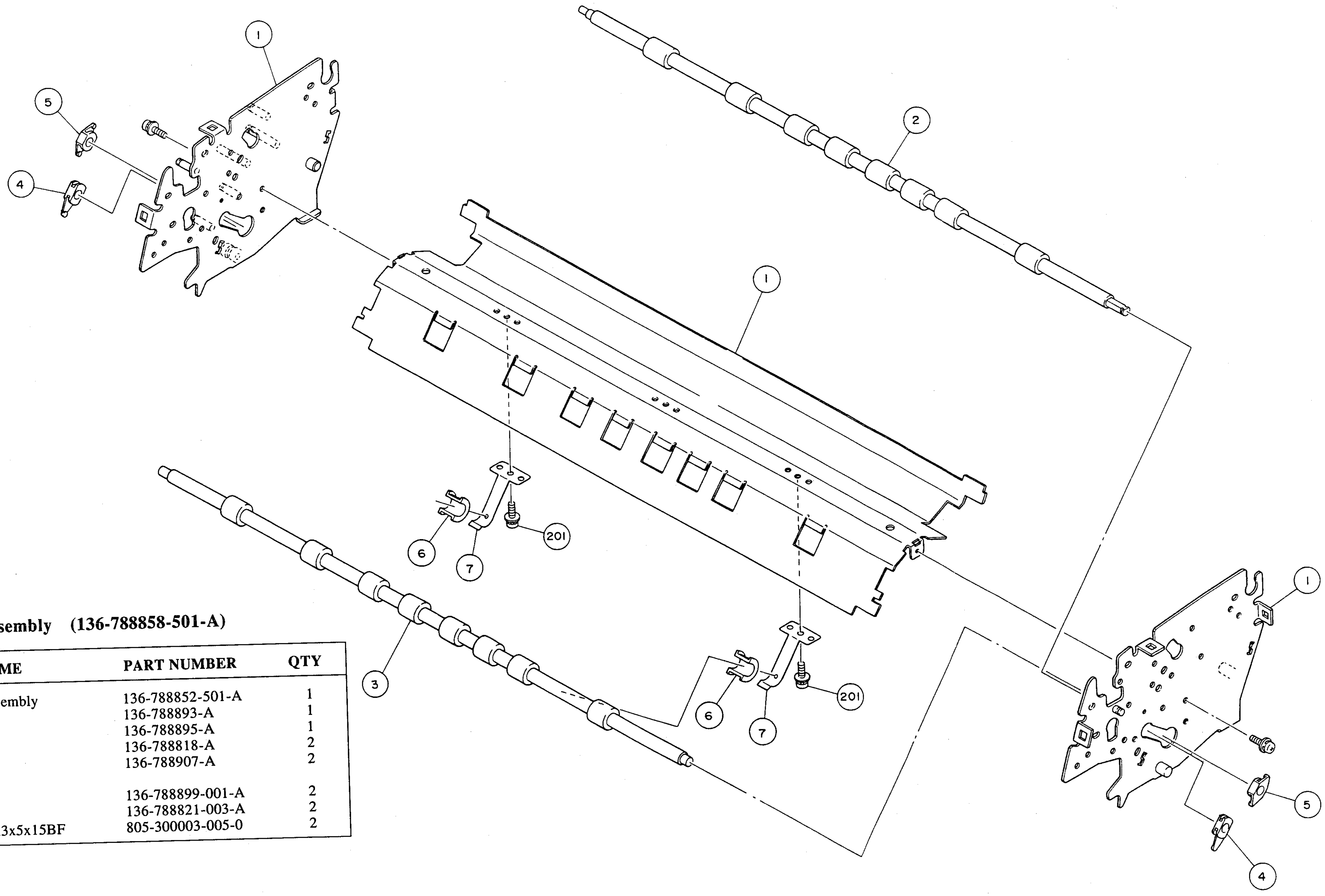


Figure 6-46 Unit Sub (L) Assembly

2 Bin Sheet Feeder Unit (L) (136-218949-501-A)

ITEM	PART NAME	PART NUMBER	QTY
1	2 Bin Main Unit Assembly (See Figure 6-48 for breakdown)	136-218957-501-A	1
2	Upper Stacker	136-788815-001-A	1
3	Stacker Guide Assembly	136-788828-001-A	1
3-1	Stacker Guide	136-788834-001-A	1
3-2	Paper Guide	136-788835-A	1
4	Center Guide	136-788807-001-A	2
5	Hopper Guide Bar	136-788866-A	4

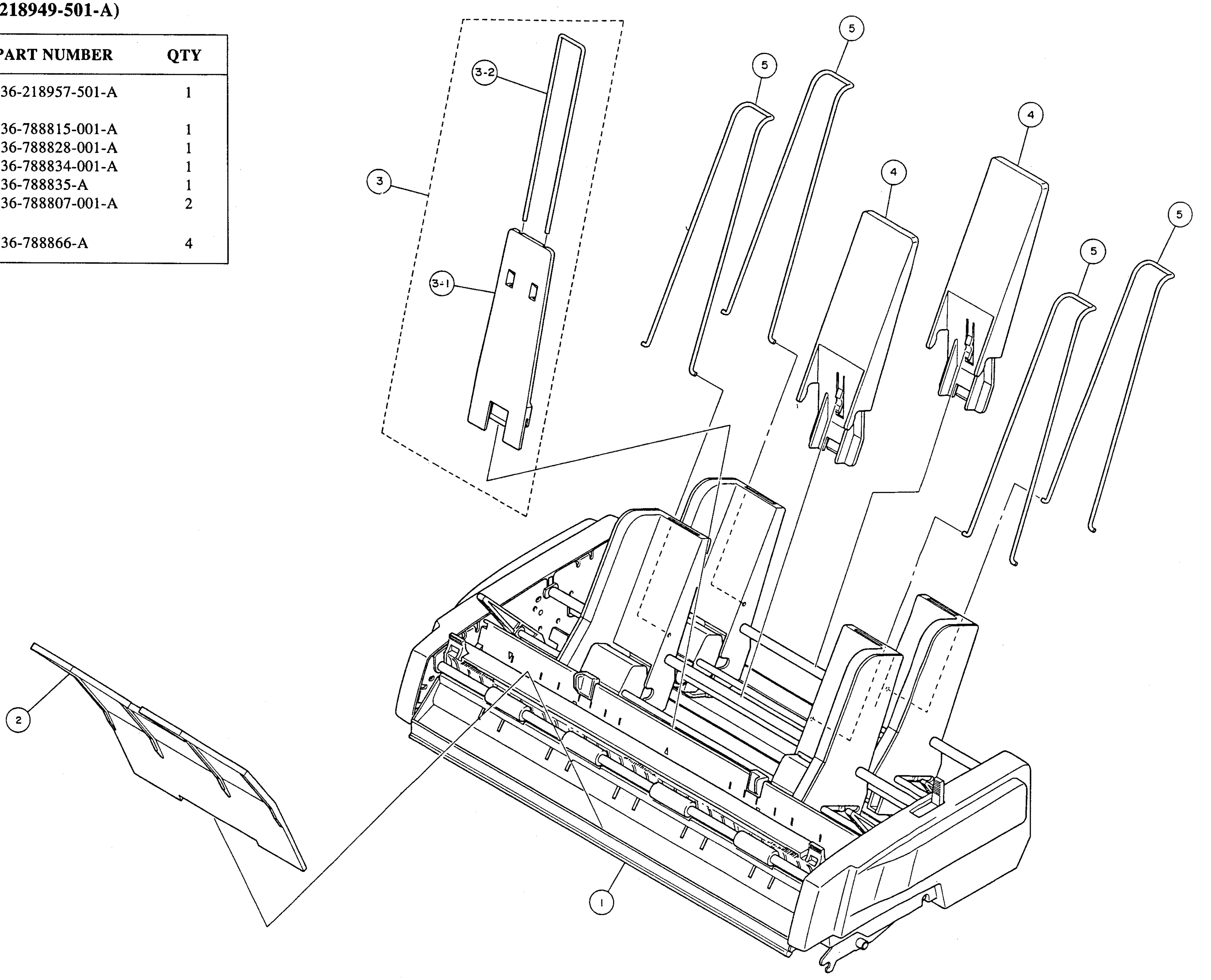


Figure 6-47 2 Bin Sheet Feeder Unit (L)

2 Bin Main Unit Assembly (136-218957-501-A) - 1/2

ITEM	PART NAME	PART NUMBER	QTY
1	2 Bin Unit Subassembly (See Figure 6-49 for breakdown)	136-788855-501-A	1
2	Middle Guide L Assembly	136-788871-501-A	1
2-1	Middle Guide (L)	136-788859-501-A	1
2-2	Side Guide	136-788849-001-A	1
2-3	Side Guide	136-788849-002-A	1
3	Eject Guide L Assembly	136-788870-501-A	1
3-1	Eject Guide (L) Subassembly	136-789409-501-A	1
3-2	Stacker Roller (L)	136-788902-A	1
3-3	Bushing D	136-788901-001-A	1
3-4	Bushing D	136-788901-002-A	1
3-5	Eject Roller Gear	136-788843-A	1
3-201	E Ring (E-37)	803-010030-037-A	1
4	Bottom Stacker (L) Assembly	136-788869-501-A	1
4-1	Bottom Stacker (L) Subassembly	136-789410-501-A	1
4-2	Front Stay (L)	136-788904-A	1
4-201	Screw #2CBTSx3x6x3GF	805-230103-006-0	3
5	Rear Stacker (L) Assembly	136-788822-501-A	1
5-1	Rear Stacker	136-788823-501-A	1
5-2	E.S.D Brush (L)	136-788824-501-A	1
5-201	Screw PL-CPIMSx3x5x15BF	805-300003-005-0	2
6	Hopper Unit Assembly	136-788825-501-A	1
6-1	Hopper Base	136-788791-001-A	1
6-2	Hopper Base	136-788791-002-A	1
6-3	Hopper Cover	136-788797-001-A	1
6-4	Hopper Cover	136-788797-002-A	1
6-5	Separator	136-788792-001-A	1
6-6	Separator	136-788792-002-A	1
6-7	Hopper Plate Assembly	136-788794-001-A	1
6-8	Hopper Plate Assembly	136-788794-002-A	1
6-9	Separator Spring	136-788793-001-A	2
6-10	Pressure Spring	136-788861-002-A	2
6-11	Select Arm	136-788798-A	2
6-12	Lock Piece	136-787516-002-A	2
6-13	Hopper Release Bar	136-788817-501-A	1
6-14	Hold Shaft	136-788809-501-A	1
7	Hopper Unit 2 Assembly	136-788826-501-A	1
7-1	Hopper Base	136-788791-001-A	1
7-2	Hopper Base	136-788791-002-A	1
7-3	Hopper Cover	136-788797-001-A	1
7-4	Hopper Cover	136-788797-002-A	1
7-5	Separator	136-788792-001-A	1
7-6	Separator	136-788792-002-A	1
7-7	Hopper Plate Assembly	136-788794-001-A	1
7-8	Hopper Plate Assembly	136-788794-002-A	1
7-9	Separator Spring	136-788793-001-A	2

2 Bin Main Unit Assembly (136-218957-501-A) - 2/2

ITEM	PART NAME	PART NUMBER	QTY
7-10	Pressure Spring	136-788861-002-A	2
7-11	Lock Piece	136-787516-001-A	2
7-12	Hopper Release Bar	136-788817-501-A	1
7-13	Hold Shaft 2	136-788816-001-A	1
8	Feed Roller Gear Assembly	136-788808-A	1
9	Clutch Assembly	136-788800-001-A	1
9-1	Top Gear Assembly	136-788801-001-A	1
9-2	Middle Disk Assembly	136-788804-A	1
9-3	Base Gear 3	136-788889-A	1
10	Clutch Assembly	136-788800-002-A	1
10-1	Top Gear Assembly	136-788801-002-A	1
10-2	Middle Disk Assembly	136-788804-A	1
10-3	Base Gear 3	136-788889-A	1
11	Pick Roller Shaft (L)	136-788876-501-A	2
12	Eject Roller 2 (L)	136-788872-501-A	1
13	Clutch Holder Assembly	136-789408-A	2
14	Idle Gear A	136-788837-A	1
15	Idle Gear B	136-788838-A	2
16	Idle Gear C	136-788880-A	1
17	Idle Gear D	136-788836-A	1
18	Idle Gear E	136-788910-A	1
19	Idle Gear G	136-788911-A	2
20	Idle Gear F	136-788912-A	1
21	Gear Pulley D	136-788848-A	2
22	Eject Roller Gear	136-788843-A	1
23	Pick Roller Gear	136-788841-A	2
24	Release Lever R	136-788814-001-A	2
25	Release Lever L	136-788814-002-A	2
26	Pick Roller	136-788811-001-A	2
27	Pick Roller	136-788811-002-A	2
28	Select Lever	136-788799-A	1
29	Eject Spring	136-788893-001-A	2
30	Hold Bushing	136-788818-A	8
31	Side Cover L	136-788886-001-A	1
32	Side Cover R	136-788887-001-A	1
33	Idle Gear H	136-788913-A	2
34	Nut Washer	136-789407-A	2
35	Pulley Spacer	136-788919-A	1
201	Micro-Pitch Timing Belt	808-805049-016-A	1
202	Screw, PL-CPIMSx3x6x15BF	805-300003-006-0	6
203	Screw, SL-CPIMSx3x10x15BF	805-310003-010-0	2
204	Screw, PL-CPIMSx3x8x15BF	805-300003-008-0	2
205	Screw, PL-CPIMSx4x8x15BF	805-300004-008-0	2
206	E Ring (E-32)	803-010030-032-0	3
207	E Ring (E-40)	803-010030-040-0	2

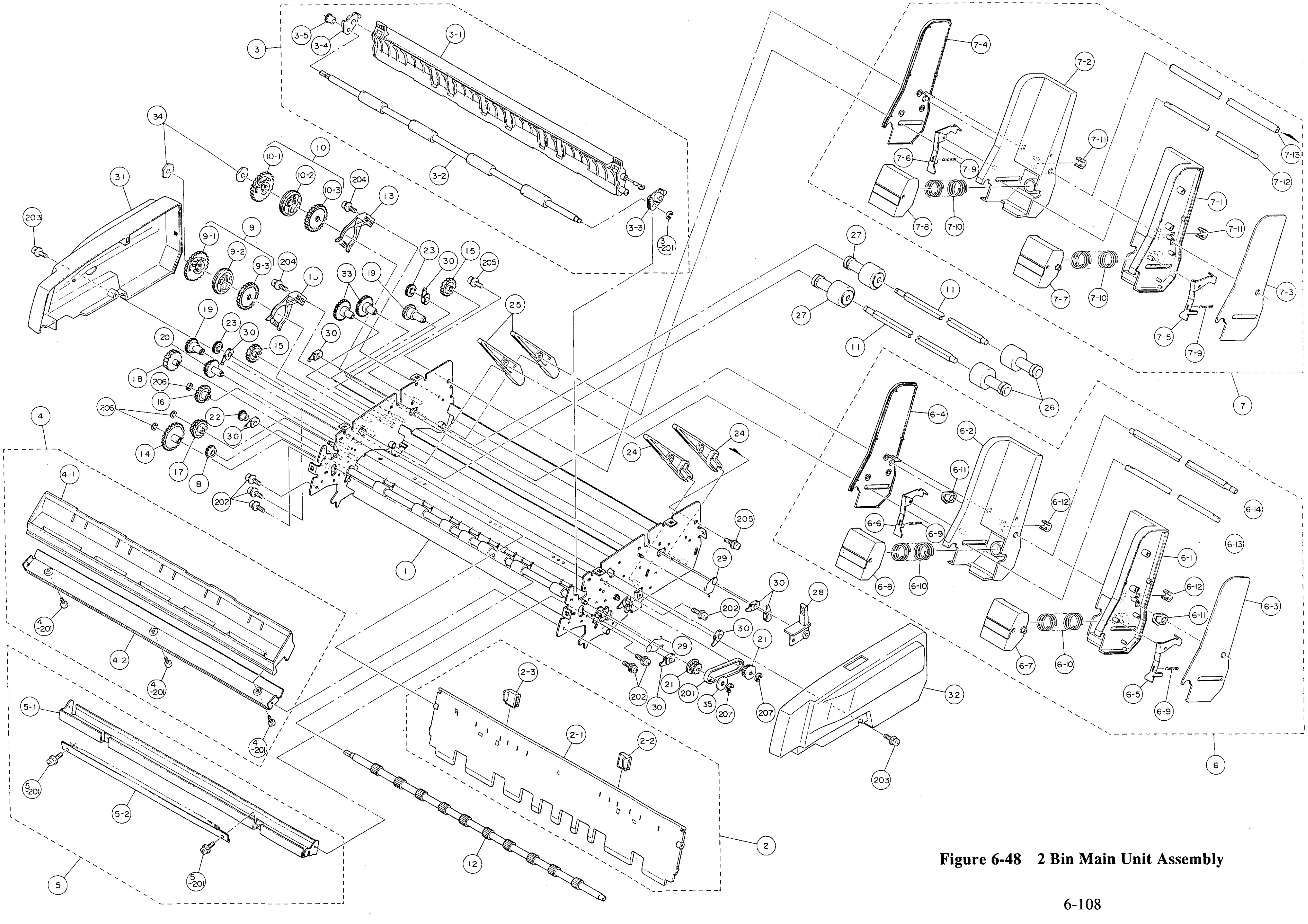

3
3-5
3-4
3-1
3-2
3-3
3-201
34
10
10-1
10-2
10-3
204
13
31
203
9
9-1
9-2
9-3
204
13
23
30
15
205
33
19
19
23
30
15
30
20
18
206
16
25
206
22
30
14
17
8
202
4
4-1
4-201
4-2
4-201
4-201
1
5
5-1
5-201
5-2
5-201
12
2
2-1
2-2
2-3
7-4
7-2
7-11
7-13
7-12
7-6
7-9
7-8
7-10
7-1
7-11
7-7
7-10
7-5
7-9
7-3
7
27
27
11
11
26
6-4
6-2
6-11
6-12
6-14
6-13
6-6
6-9
6-8
6-10
6-1
6-12
6-11
6-3
6-7
6-10
6-5
6-9
6
24
24
205
29
30
28
202
30
21
29
202
30
21
201
35
207
207
32
203

Figure 6-48 2 Bin Main Unit Assembly

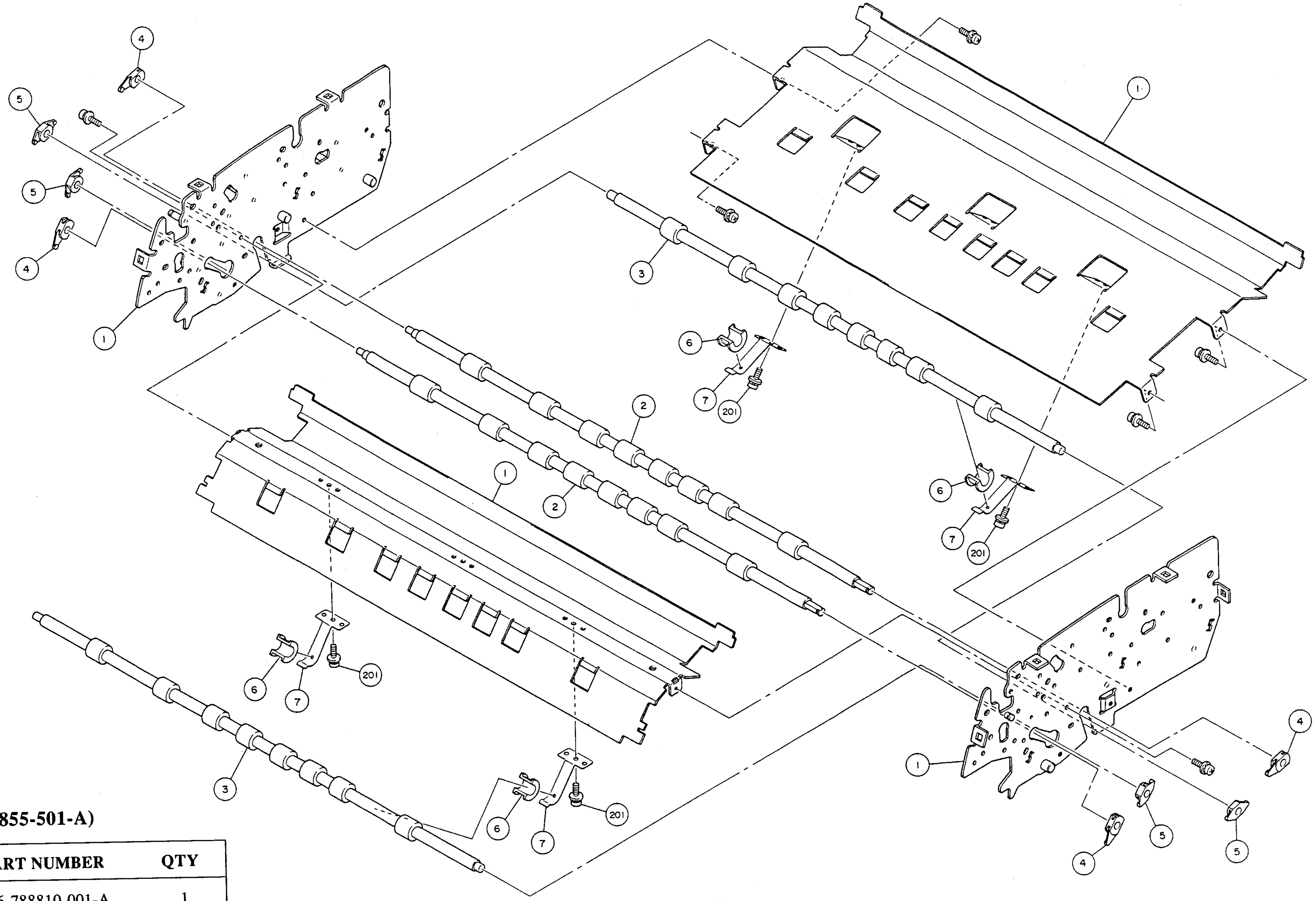


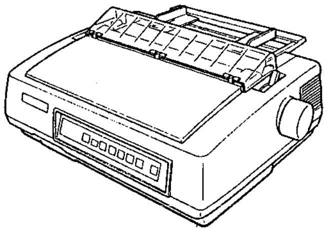
Figure 6-49 Unit Subassembly

2 Bin Unit Subassembly (136-788855-501-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Second Main Frame Assembly	136-788810-001-A	1
2	Feed Roller	136-788893-A	2
3	Pressure Roller (L)	136-788895-A	2
4	Hold Bushing	136-788818-A	4
5	Guide Bushing	136-788907-A	4
6	Back-Up Piece	136-788899-001-A	4
7	Back-Up Spring	136-788821-002-A	4
201	Screw, PL-CPIMSx3x5x15BF	805-300003-005-0	4

Section 7

Diagrams



Figures 7-1 through 7-13 contain cabling diagrams for the P6200/P6300 and P60/P70 printers. These diagrams can be used when troubleshooting any potential problem with these printers.

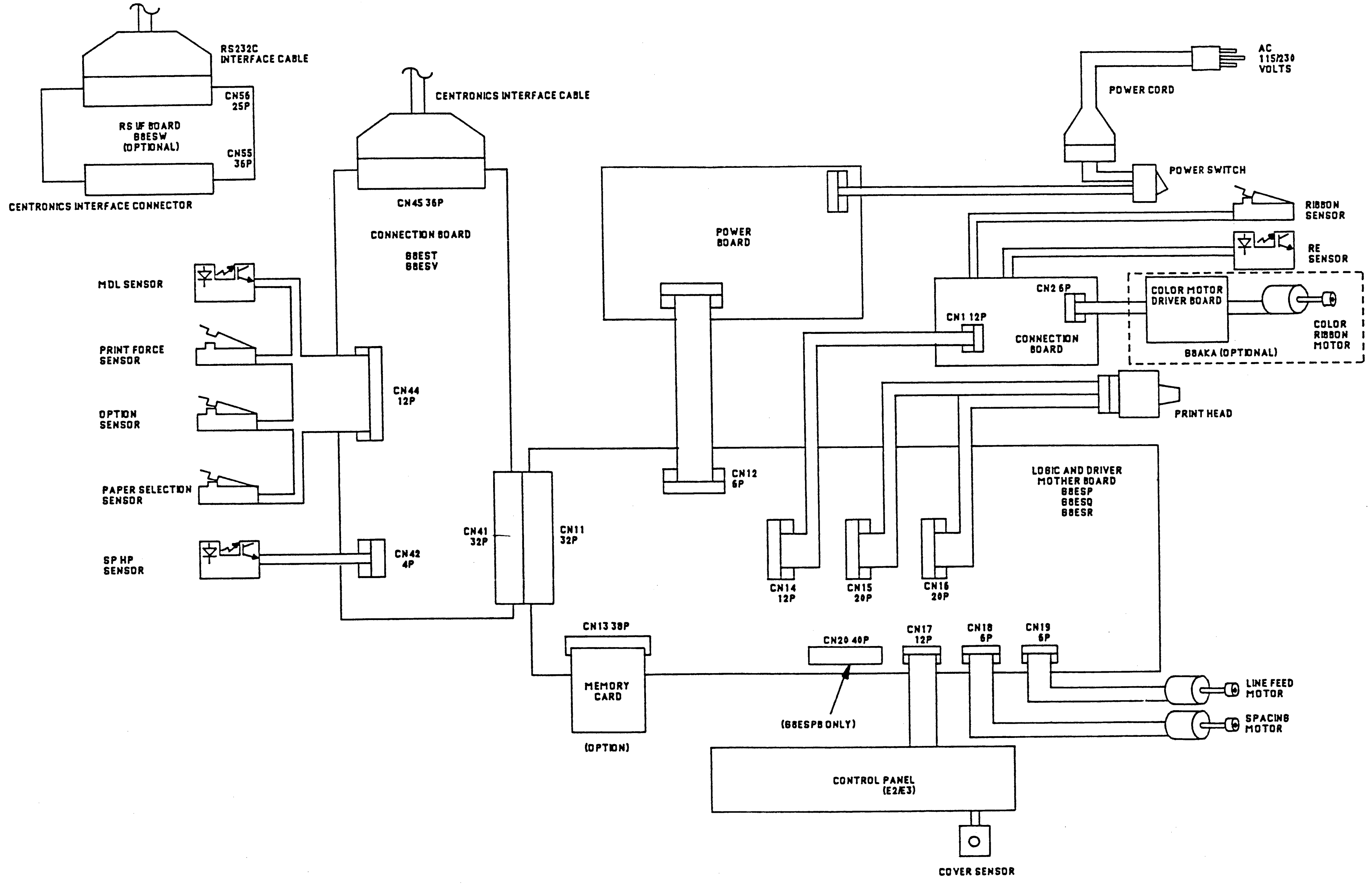

RS232C INTERFACE CABLE
CN56 25P
RS I/F BOARD 88ESW (OPTIONAL)
CN55 36P
CENTRONICS INTERFACE CONNECTOR
CENTRONICS INTERFACE CABLE
CN45 36P
CONNECTION BOARD 88EST 88ESV
MDL SENSOR
PRINT FORCE SENSOR
OPTION SENSOR
PAPER SELECTION SENSOR
SP HP SENSOR
CN44 12P
CN42 4P
CN41 32P
CN11 32P
POWER BOARD
CN12 6P
AC 115/230 VOLTS
POWER CORD
POWER SWITCH
RIBBON SENSOR
RE SENSOR
CN2 6P
CN1 12P
CONNECTION BOARD
COLOR MOTOR DRIVER BOARD
COLOR RIBBON MOTOR
88AKA (OPTIONAL)
PRINT HEAD
LOGIC AND DRIVER MOTHER BOARD 88ESP 88ESQ 88ESR
CN14 12P
CN15 20P
CN16 20P
CN13 38P
MEMORY CARD
(OPTION)
CN20 40P
(88ESPB ONLY)
CN17 12P
CN18 6P
CN19 6P
LINE FEED MOTOR
SPACING MOTOR
CONTROL PANEL (E2/E3)
COVER SENSOR

Figure 7-1 Interconnection Circuit Diagram

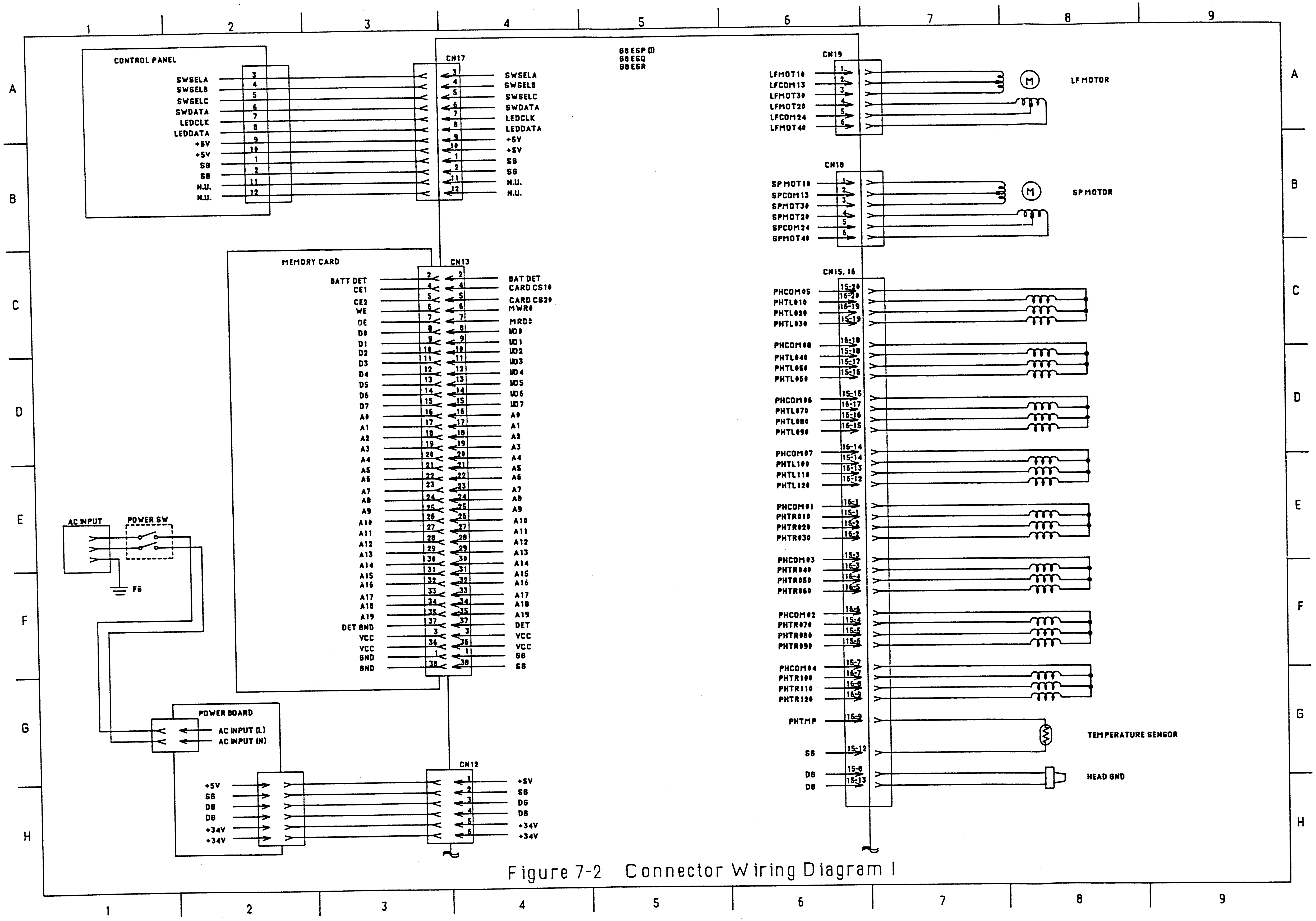

CONTROL PANEL
SWSELA
SWSELB
SWSELC
SWDATA
LEDCLK
LEDDATA
+5V
SG
N.U.
CN17
68ESP (I)
68ESQ
68ESR
CN19
LFMOT10
LFCOM13
LFMOT30
LFMOT20
LFCOM24
LFMOT40
M
LF MOTOR
CN18
SPMOT10
SPCOM13
SPMOT30
SPMOT20
SPCOM24
SPMOT40
SP MOTOR
MEMORY CARD
CN13
BATT DET
CE1
CE2
WE
OE
D0
D1
D2
D3
D4
D5
D6
D7
A0
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
A14
A15
A16
A17
A18
A19
DET GND
VCC
GND
BAT DET
CARD CS10
CARD CS20
MWR0
MRD0
I/O0
I/O1
I/O2
I/O3
I/O4
I/O5
I/O6
I/O7
DET
CN15, 16
PHCOM05
PHTL010
PHTL020
PHTL030
PHCOM08
PHTL040
PHTL050
PHTL060
PHCOM06
PHTL070
PHTL080
PHTL090
PHCOM07
PHTL100
PHTL110
PHTL120
PHCOM01
PHTR010
PHTR020
PHTR030
PHCOM03
PHTR040
PHTR050
PHTR060
PHCOM02
PHTR070
PHTR080
PHTR090
PHCOM04
PHTR100
PHTR110
PHTR120
PHTMP
TEMPERATURE SENSOR
SG
DG
HEAD GND
AC INPUT
POWER SW
FG
POWER BOARD
AC INPUT (L)
AC INPUT (N)
CN12
+5V
SG
DG
+34V
1 2 3 4 5 6 7 8 9
A B C D E F G H

Figure 7-2 Connector Wiring Diagram I

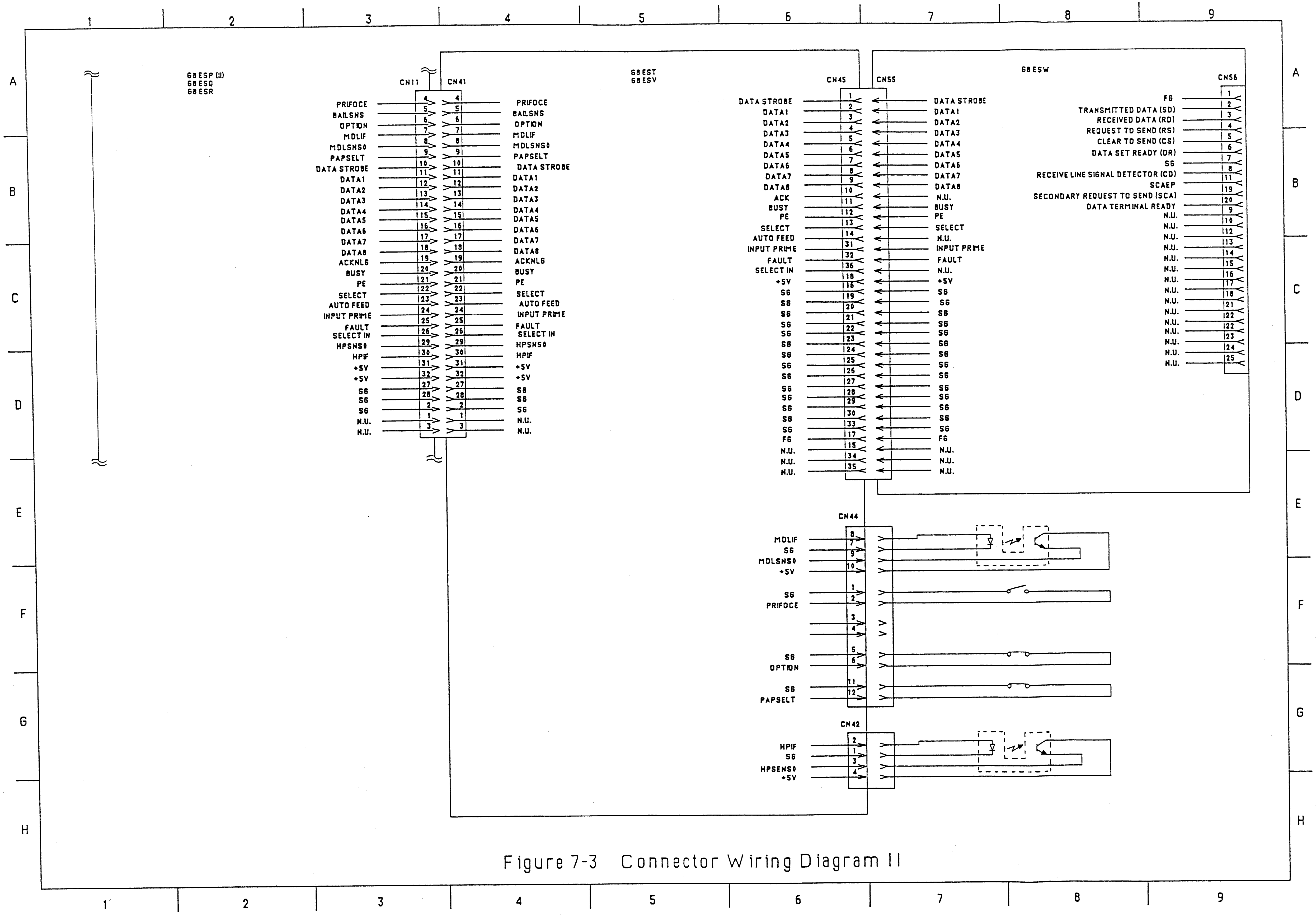

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
68ESP (II)
68ESQ
68ESR
CN11
CN41
68EST
68ESV
PRIFOCE 4 4 PRIFOCE
BAILSNS 5 5 BAILSNS
OPTION 6 6 OPTION
MDLIF 7 7 MDLIF
MDLSNS0 8 8 MDLSNS0
PAPSELT 9 9 PAPSELT
DATA STROBE 10 10 DATA STROBE
DATA1 11 11 DATA1
DATA2 12 12 DATA2
DATA3 13 13 DATA3
DATA4 14 14 DATA4
DATA5 15 15 DATA5
DATA6 16 16 DATA6
DATA7 17 17 DATA7
DATA8 18 18 DATA8
ACKNLG 19 19 ACKNLG
BUSY 20 20 BUSY
PE 21 21 PE
SELECT 22 22 SELECT
AUTO FEED 23 23 AUTO FEED
INPUT PRIME 24 24 INPUT PRIME
FAULT 25 25 FAULT
SELECT IN 26 26 SELECT IN
HPSNS0 29 29 HPSNS0
HPIF 30 30 HPIF
+5V 31 31 +5V
+5V 32 32 +5V
SG 27 27 SG
SG 28 28 SG
SG 2 2 SG
N.U. 1 1 N.U.
N.U. 3 3 N.U.
CN45
CN55
68ESW
DATA STROBE 1 DATA STROBE
DATA1 2 DATA1
DATA2 3 DATA2
DATA3 4 DATA3
DATA4 5 DATA4
DATA5 6 DATA5
DATA6 7 DATA6
DATA7 8 DATA7
DATA8 9 DATA8
ACK 10 N.U.
BUSY 11 BUSY
PE 12 PE
SELECT 13 SELECT
AUTO FEED 14 N.U.
INPUT PRIME 31 INPUT PRIME
FAULT 32 FAULT
SELECT IN 36 N.U.
+5V 18 +5V
SG 16 SG
SG 19 SG
SG 20 SG
SG 21 SG
SG 22 SG
SG 23 SG
SG 24 SG
SG 25 SG
SG 26 SG
SG 27 SG
SG 28 SG
SG 29 SG
SG 30 SG
SG 33 SG
FG 17 FG
N.U. 15 N.U.
N.U. 34 N.U.
N.U. 35 N.U.
CN56
FG 1
TRANSMITTED DATA (SD) 2
RECEIVED DATA (RD) 3
REQUEST TO SEND (RS) 4
CLEAR TO SEND (CS) 5
DATA SET READY (DR) 6
SG 7
RECEIVE LINE SIGNAL DETECTOR (CD) 8
SCAEP 11
SECONDARY REQUEST TO SEND (SCA) 19
DATA TERMINAL READY 20
N.U. 9
N.U. 10
N.U. 12
N.U. 13
N.U. 14
N.U. 15
N.U. 16
N.U. 17
N.U. 18
N.U. 21
N.U. 22
N.U. 22
N.U. 23
N.U. 24
N.U. 25
CN44
MDLIF 8
SG 7
MDLSNS0 9
+5V 10
SG 1
PRIFOCE 2
3
4
SG 5
OPTION 6
SG 11
PAPSELT 12
CN42
HPIF 2
SG 1
HPSENS0 3
+5V 4

Figure 7-3 Connector Wiring Diagram II

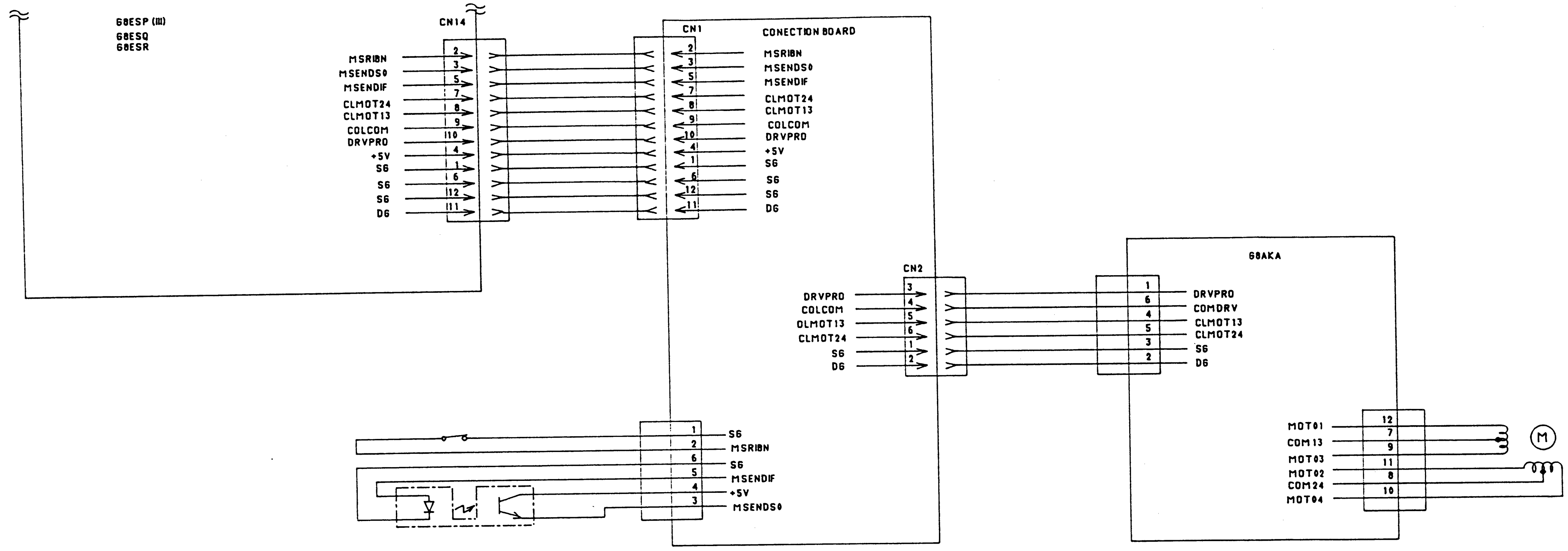

68ESP (III)
68ESQ
68ESR
CN14
MSRIBN
MSENDS0
MSENDIF
CLMOT24
CLMOT13
COLCOM
DRVPRO
+5V
S6
S6
S6
D6
2
3
5
7
8
9
10
4
1
6
12
11
CN1
CONECTION BOARD
MSRIBN
MSENDS0
MSENDIF
CLMOT24
CLMOT13
COLCOM
DRVPRO
+5V
S6
S6
S6
D6
CN2
DRVPRO
COLCOM
OLMOT13
CLMOT24
S6
D6
68AKA
DRVPRO
COMDRV
CLMOT13
CLMOT24
S6
D6
S6
MSRIBN
S6
MSENDIF
+5V
MSENDS0
MOT01
COM13
MOT03
MOT02
COM24
MOT04
M

Figure 7-4 Connector Wiring Diagram III

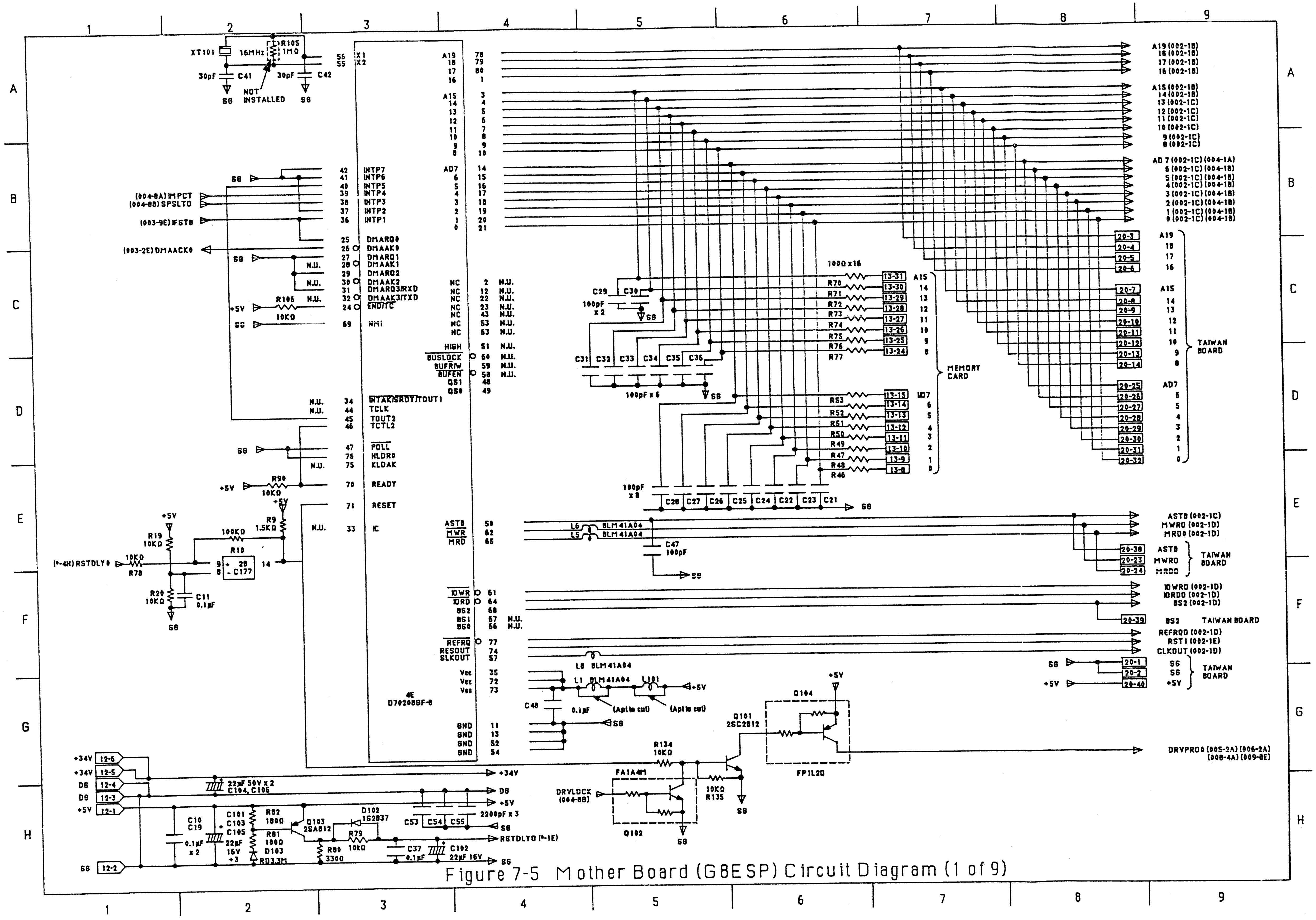

XT101
16MHz
R105
1MΩ
30pF
C41
C42
NOT INSTALLED
SG
X1
X2
A19
A15
AD7
INTP7
INTP6
INTP5
INTP4
INTP3
INTP2
INTP1
(004-8A) IMPCT
(004-8B) SPSLTO
(003-9E) IFSTB
(003-2E) DMAACK0
DMARQ0
DMAAK0
DMARQ1
DMAAK1
DMARQ2
DMAAK2
DMARQ3/RXD
DMAAK3/TXD
END/TC
NMI
N.U.
R106
10KΩ
+5V
NC
HIGH
BUSLOCK
BUFR/W
BUFEN
QS1
QS0
INTAK/SRDY/TOUT1
TCLK
TOUT2
TCTL2
POLL
HLDRQ
HLDAK
READY
RESET
IC
R90
10KΩ
R9
1.5KΩ
R19
10KΩ
R10
100KΩ
(*-4H) RSTDLY0
R78
10KΩ
C177
R20
10KΩ
C11
0.1μF
ASTB
MWR
MRD
IOWR
IORD
BS2
BS1
BS0
REFRQ
RESOUT
CLKOUT
Vcc
GND
4E
D70208GF-8
C29
C30
100pF x 2
C31
C32
C33
C34
C35
C36
100pF x 6
100Ω x16
R70
R71
R72
R73
R74
R75
R76
R77
R53
R52
R51
R50
R49
R47
R48
R46
100pF x 8
C28
C27
C26
C25
C24
C22
C23
C21
MEMORY CARD
13-31
13-30
13-29
13-28
13-27
13-26
13-25
13-24
13-15
13-14
13-13
13-12
13-11
13-10
13-9
13-8
A19 (002-1B)
18 (002-1B)
17 (002-1B)
16 (002-1B)
A15 (002-1B)
14 (002-1B)
13 (002-1C)
12 (002-1C)
11 (002-1C)
10 (002-1C)
9 (002-1C)
8 (002-1C)
AD 7 (002-1C) (004-1A)
6 (002-1C) (004-1B)
5 (002-1C) (004-1B)
4 (002-1C) (004-1B)
3 (002-1C) (004-1B)
2 (002-1C) (004-1B)
1 (002-1C) (004-1B)
0 (002-1C) (004-1B)
TAIWAN BOARD
L6
L5
BLM41A04
C47
100pF
ASTB (002-1C)
MWRO (002-1D)
MRDO (002-1D)
IOWRO (002-1D)
IORDO (002-1D)
BS2 (002-1D)
REFRQO (002-1D)
RST1 (002-1E)
CLKOUT (002-1D)
L8
L1
L101
(Apt to cut)
C48
0.1μF
Q104
Q101
2SC2812
R134
10KΩ
FA1A4M
DRVLOCK (004-8B)
Q102
R135
10KΩ
FP1L2Q
DRVPRO0 (005-2A) (006-2A) (008-4A) (009-8E)
+34V
DG
12-6
12-5
12-4
12-3
12-1
12-2
22μF 50V x 2
C104, C106
C10
C19
0.1μF x 2
C101
C103
C105
22μF 16V x3
R82
180Ω
R81
100Ω
D103
RD3.3M
Q103
2SA812
D102
1S2837
R79
10KΩ
R80
330Ω
C53
C54
C55
2200pF x 3
C37
0.1μF
C102
22μF 16V
RSTDLYO (*-1E)
A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8
9

Figure 7-5 Mother Board (G8ESP) Circuit Diagram (1 of 9)

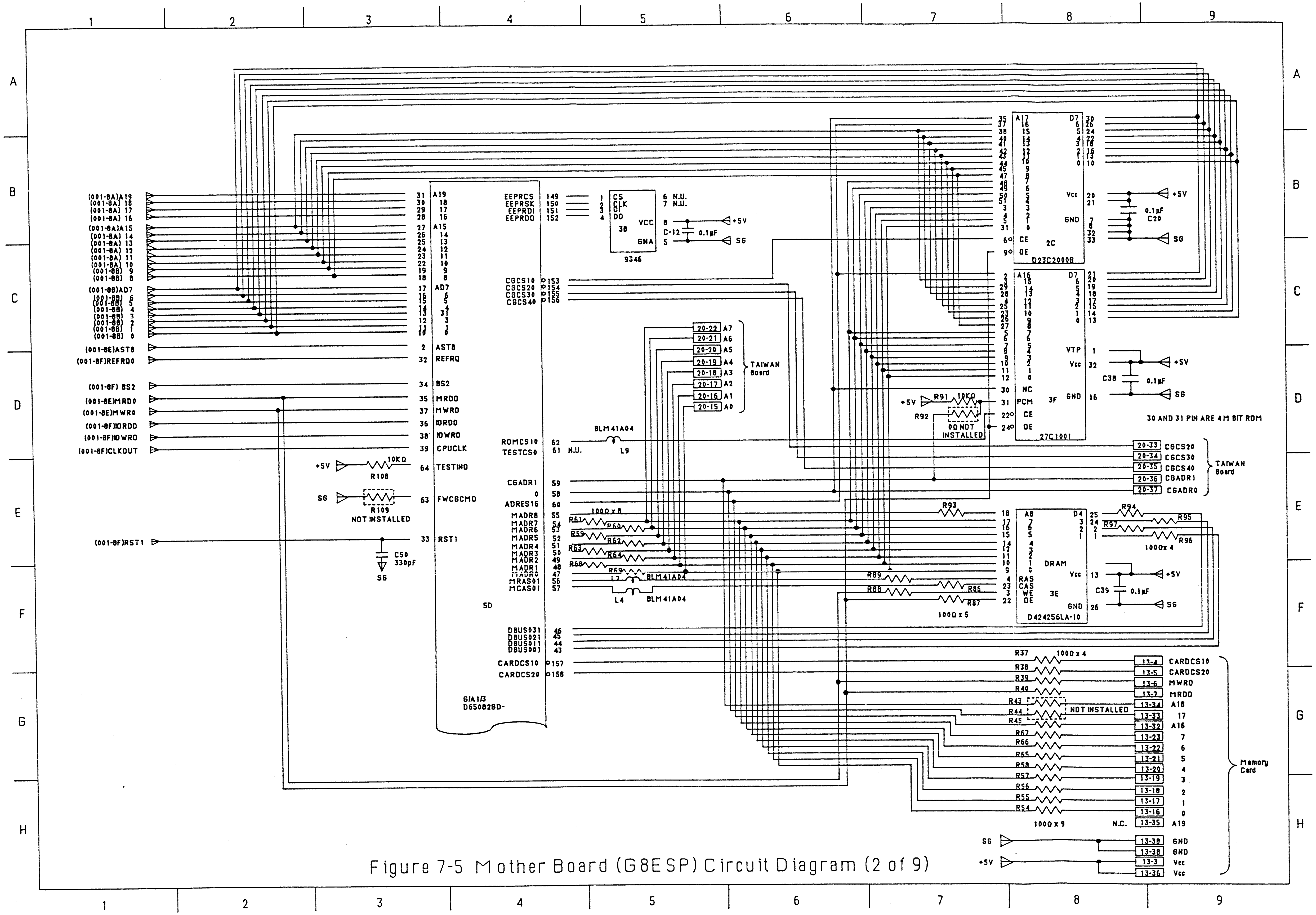

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
(001-8A)A19
(001-8A) 18
(001-8A) 17
(001-8A) 16
(001-8A)A15
(001-8B)AD7
(001-8E)ASTB
(001-8F)REFRQ0
(001-8F) BS2
(001-8E)MRD0
(001-8E)MWR0
(001-8F)IORD0
(001-8F)IOWR0
(001-8F)CLKOUT
(001-8F)RST1
A19
A15
AD7
ASTB
REFRQ
BS2
MRD0
MWR0
IORD0
IOWR0
CPUCLK
TESTIN0
FWCGCM0
RST1
+5V
10KΩ
R108
SG
R109
NOT INSTALLED
C50
330pF
EEPRCS
EEPRSK
EEPRDI
EEPRD0
CS
CLK
DI
DO
VCC
GNA
6 N.U.
7 N.U.
3B
9346
C-12
0.1µF
CGCS10
CGCS20
CGCS30
CGCS40
ROMCS10
TESTCS0
N.U.
BLM41A04
L9
CGADR1
ADRES16
MADR8
MADR7
MADR6
MADR5
MADR4
MADR3
MADR2
MADR1
MADR0
MRAS01
MCAS01
100Ω x 8
R61
R60
R59
R62
R63
R64
R68
R69
L7
L4
5D
DBUS031
DBUS021
DBUS011
DBUS001
CARDCS10
CARDCS20
G/A1/3
D65082GD-
20-22 A7
20-21 A6
20-20 A5
20-19 A4
20-18 A3
20-17 A2
20-16 A1
20-15 A0
TAIWAN
Board
A17
D7
Vcc
GND
CE
OE
2C
D23C2000G
A16
VTP
NC
PCM
3F
27C1001
R91
R92
10KΩ
DO NOT INSTALLED
C20
C38
0.1µF
30 AND 31 PIN ARE 4M BIT ROM
20-33 CGCS20
20-34 CGCS30
20-35 CGCS40
20-36 CGADR1
20-37 CGADR0
TAIWAN
Board
R93
R94
R95
R96
R97
100Ω x 4
A8
D4
RAS
CAS
WE
OE
DRAM
3E
D424256LA-10
C39
R89
R88
R86
R87
100Ω x 5
R37
R38
R39
R40
R43
R44
R45
R67
R66
R65
R58
R57
R56
R55
R54
100Ω x 9
N.C.
13-4 CARDCS10
13-5 CARDCS20
13-6 MWR0
13-7 MRD0
13-34 A18
13-33 17
13-32 A16
13-23 7
13-22 6
13-21 5
13-20 4
13-19 3
13-18 2
13-17 1
13-16 0
13-35 A19
13-38 GND
13-38 GND
13-3 Vcc
13-36 Vcc
Memory
Card

Figure 7-5 Mother Board (G8ESP) Circuit Diagram (2 of 9)

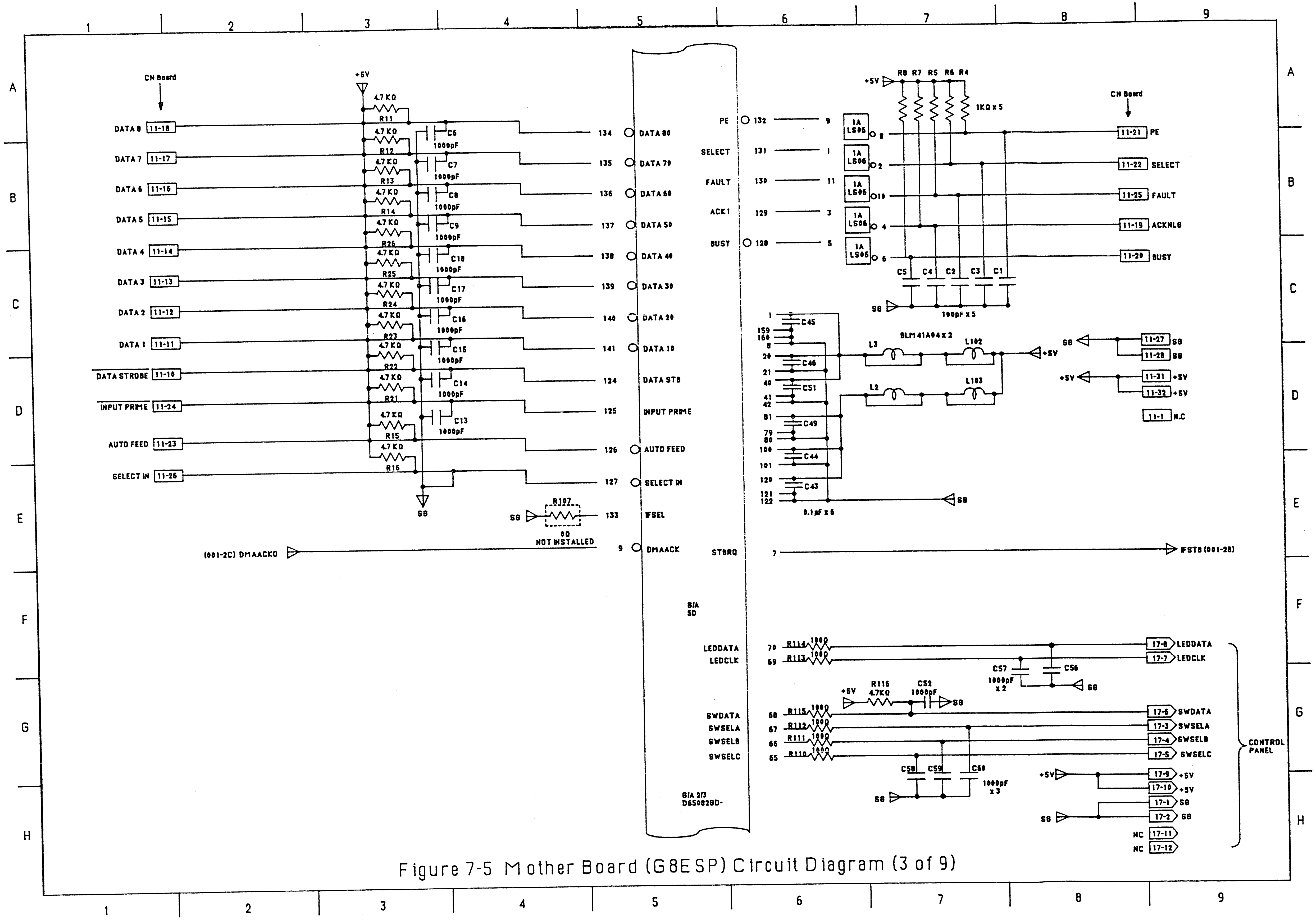

CN Board
+5V
4.7KΩ
R11
R12
R13
R14
R26
R25
R24
R23
R22
R21
R15
R16
C6
C7
C8
C9
C10
C17
C16
C15
C14
C13
1000pF
DATA 8 11-18
DATA 7 11-17
DATA 6 11-16
DATA 5 11-15
DATA 4 11-14
DATA 3 11-13
DATA 2 11-12
DATA 1 11-11
DATA STROBE 11-10
INPUT PRIME 11-24
AUTO FEED 11-23
SELECT IN 11-26
SG
134 DATA 80
135 DATA 70
136 DATA 60
137 DATA 50
138 DATA 40
139 DATA 30
140 DATA 20
141 DATA 10
124 DATA STB
125 INPUT PRIME
126 AUTO FEED
127 SELECT IN
R107
133 IFSEL
0Ω
NOT INSTALLED
(001-2C) DMAACKO
9 DMAACK
PE 132
SELECT 131
FAULT 130
ACK1 129
BUSY 128
STBRQ 7
1A LS06
R8 R7 R5 R6 R4
1KΩ x 5
C5 C4 C2 C3 C1
1000pF x 5
11-21 PE
11-22 SELECT
11-25 FAULT
11-19 ACKNLG
11-20 BUSY
C45
C46
C51
C49
C44
C43
0.1μF x 6
BLM41A04 x 2
L3
L102
L2
L103
11-27 SG
11-28 SG
11-31 +5V
11-32 +5V
11-1 N.C
IFSTB (001-2B)
G/A
SD
G/A 2/3
D650828D-
LEDDATA 70
LEDCLK 69
R114 100Ω
R113 100Ω
C57
C56
1000pF x 2
R116 4.7KΩ
C52 1000pF
SWDATA 68
SWSELA 67
SWSELB 66
SWSELC 65
R115 100Ω
R112 100Ω
R111 100Ω
R110 100Ω
C58 C59 C60
1000pF x 3
17-8 LEDDATA
17-7 LEDCLK
17-6 SWDATA
17-3 SWSELA
17-4 SWSELB
17-5 SWSELC
17-9 +5V
17-10 +5V
17-1 SG
17-2 SG
NC 17-11
NC 17-12
CONTROL PANEL
1 2 3 4 5 6 7 8 9
A B C D E F G H

Figure 7-5 Mother Board (G8ESP) Circuit Diagram (3 of 9)

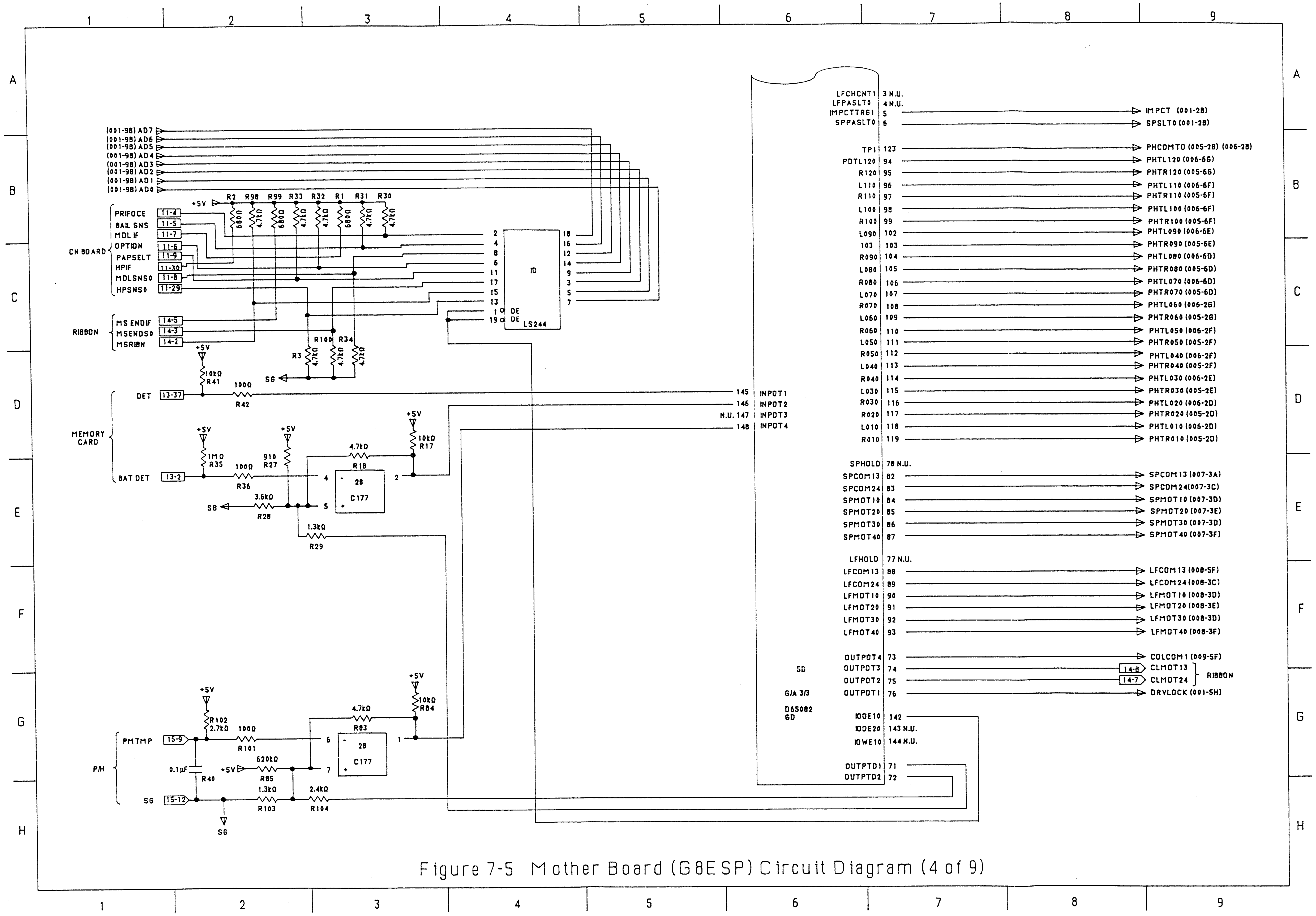

1 2 3 4 5 6 7 8 9
A B C D E F G H
(001-9B) AD7
(001-9B) AD6
(001-9B) AD5
(001-9B) AD4
(001-9B) AD3
(001-9B) AD2
(001-9B) AD1
(001-9B) AD0
+5V
R2 R98 R99 R33 R32 R1 R31 R30
680Ω 4.7kΩ 680Ω 4.7kΩ 4.7kΩ 680Ω 4.7kΩ 4.7kΩ
CN BOARD
PRIFOCE 11-4
BAIL SNS 11-5
MDL IF 11-7
OPTION 11-6
PAPSELT 11-9
HPIF 11-30
MDLSNS0 11-8
HPSNS0 11-29
RIBBON
MS ENDIF 14-5
MSENDS0 14-3
MSRIBN 14-2
1D
LS244
OE
R100 R34
R3
4.7kΩ
SG
R41 10kΩ
100Ω R42
MEMORY CARD
DET 13-37
BAT DET 13-2
1MΩ R35
100Ω R36
910 R27
3.6kΩ R28
4.7kΩ R18
10kΩ R17
2B C177
1.3kΩ R29
INPOT1 INPOT2 INPOT3 INPOT4
145 146 N.U. 147 148
P/H
PMTMP 15-9
SG 15-12
R102 2.7kΩ
100Ω R101
0.1μF R40
620kΩ R85
1.3kΩ R103
2.4kΩ R104
4.7kΩ R83
10kΩ R84
SD
G/A 3/3
D65082 GD
LFCHCNT1 3 N.U.
LFPASLT0 4 N.U.
IMPCTTRG1 5
SPPASLT0 6
IMPCT (001-2B)
SPSLT0 (001-2B)
TP1 123 PHCOMT0 (005-2B) (006-2B)
PDTL120 94 PHTL120 (006-6G)
R120 95 PHTR120 (005-6G)
L110 96 PHTL110 (006-6F)
R110 97 PHTR110 (005-6F)
L100 98 PHTL100 (006-6F)
R100 99 PHTR100 (005-6F)
L090 102 PHTL090 (006-6E)
103 103 PHTR090 (005-6E)
R090 104 PHTL080 (006-6D)
L080 105 PHTR080 (005-6D)
R080 106 PHTL070 (006-6D)
L070 107 PHTR070 (005-6D)
R070 108 PHTL060 (006-2G)
L060 109 PHTR060 (005-2G)
R060 110 PHTL050 (006-2F)
L050 111 PHTR050 (005-2F)
R050 112 PHTL040 (006-2F)
L040 113 PHTR040 (005-2F)
R040 114 PHTL030 (006-2E)
L030 115 PHTR030 (005-2E)
R030 116 PHTL020 (006-2D)
R020 117 PHTR020 (005-2D)
L010 118 PHTL010 (006-2D)
R010 119 PHTR010 (005-2D)
SPHOLD 78 N.U.
SPCOM13 82 SPCOM13 (007-3A)
SPCOM24 83 SPCOM24 (007-3C)
SPMOT10 84 SPMOT10 (007-3D)
SPMOT20 85 SPMOT20 (007-3E)
SPMOT30 86 SPMOT30 (007-3D)
SPMOT40 87 SPMOT40 (007-3F)
LFHOLD 77 N.U.
LFCOM13 88 LFCOM13 (008-5F)
LFCOM24 89 LFCOM24 (008-3C)
LFMOT10 90 LFMOT10 (008-3D)
LFMOT20 91 LFMOT20 (008-3E)
LFMOT30 92 LFMOT30 (008-3D)
LFMOT40 93 LFMOT40 (008-3F)
OUTPOT4 73 COLCOM1 (009-5F)
OUTPOT3 74 14-8 CLMOT13
OUTPOT2 75 14-7 CLMOT24
RIBBON
OUTPOT1 76 DRVLOCK (001-5H)
IOOE10 142
IOOE20 143 N.U.
IOWE10 144 N.U.
OUTPTD1 71
OUTPTD2 72

Figure 7-5 Mother Board (G8ESP) Circuit Diagram (4 of 9)

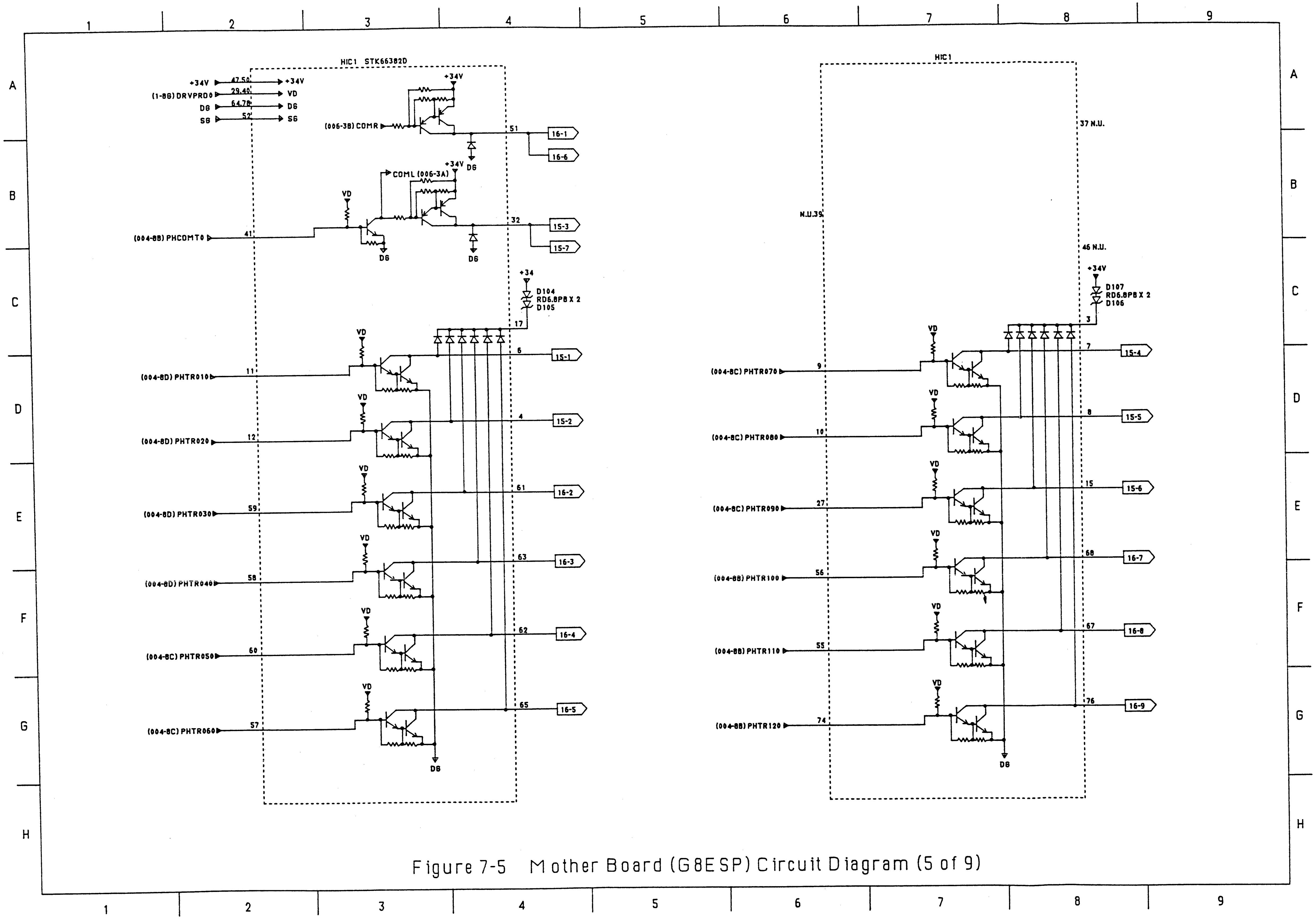

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
HIC1 STK66382D
+34V
47,50
+34V
(1-8B) DRVPRD0
29,40
VD
DB
64,78
D6
SB
52
S6
+34V
(006-3B) COMR
51
16-1
16-6
D6
+34V
COML (006-3A)
VD
(004-8B) PHCOMT0
41
D6
32
15-3
15-7
D6
+34
D104
RD6.8PB X 2
D105
17
VD
(004-8D) PHTR010
11
6
15-1
VD
(004-8D) PHTR020
12
4
15-2
VD
(004-8D) PHTR030
59
61
16-2
VD
(004-8D) PHTR040
58
63
16-3
VD
(004-8C) PHTR050
60
62
16-4
VD
(004-8C) PHTR060
57
65
16-5
D6
HIC1
37 N.U.
N.U.39
46 N.U.
+34V
D107
RD6.8PB X 2
D106
3
VD
(004-8C) PHTR070
9
7
15-4
VD
(004-8C) PHTR080
10
8
15-5
VD
(004-8C) PHTR090
27
15
15-6
VD
(004-8B) PHTR100
56
68
16-7
VD
(004-8B) PHTR110
55
67
16-8
VD
(004-8B) PHTR120
74
76
16-9
D6

Figure 7-5 Mother Board (G8ESP) Circuit Diagram (5 of 9)

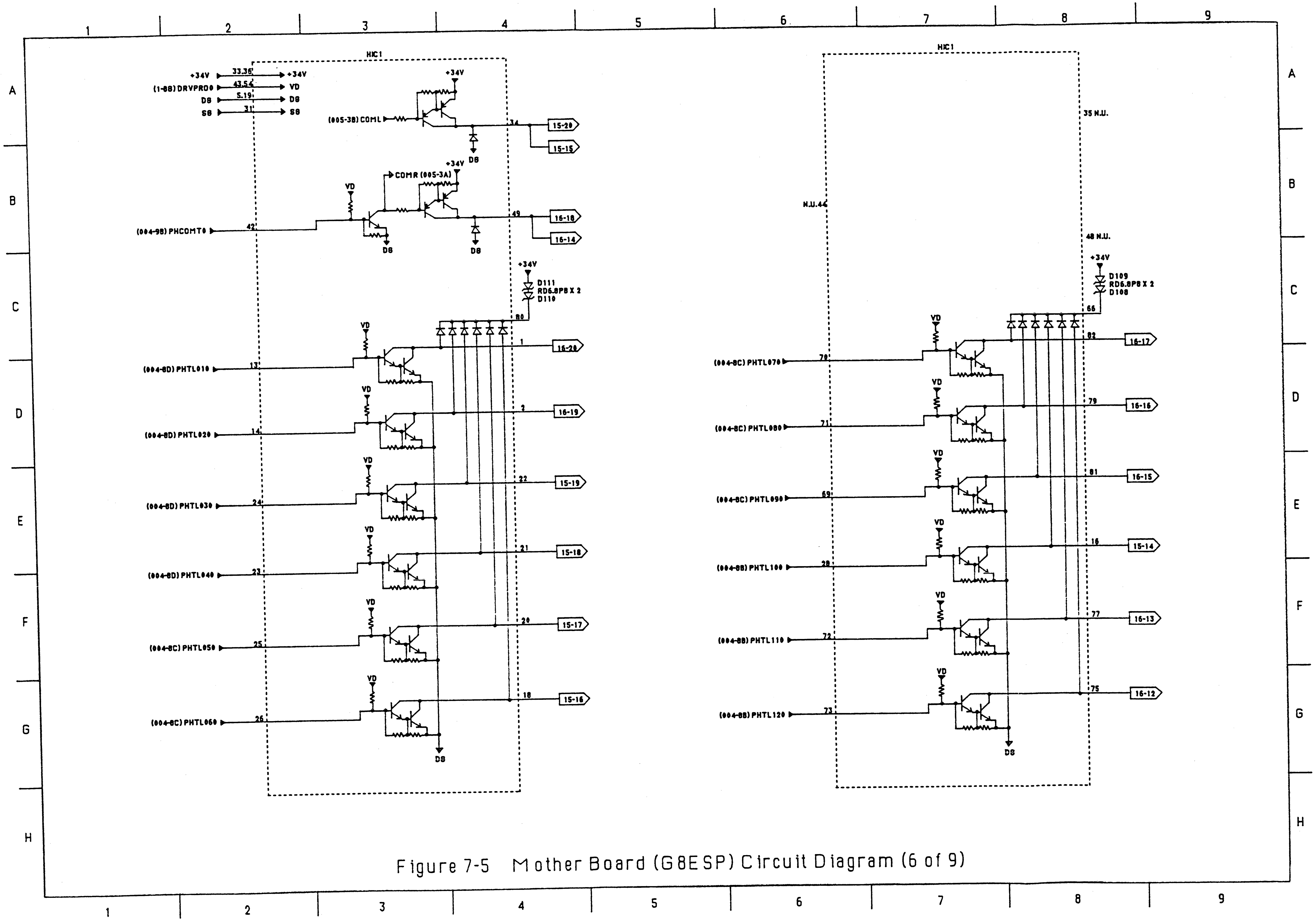

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
HIC1
+34V
33,36
+34V
(1-8B) DRVPRO0
43,54
VD
DG
5,19
DG
SG
31
SG
+34V
(005-3B) COML
34
15-20
15-15
DG
+34V
COMR (005-3A)
VD
(004-9B) PHCOMT0
42
49
16-18
16-14
DG
DG
+34V
D111
RD6.8PB X 2
D110
80
VD
(004-8D) PHTL010
13
1
16-20
VD
(004-8D) PHTL020
14
2
16-19
VD
(004-8D) PHTL030
24
22
15-19
VD
(004-8D) PHTL040
23
21
15-18
VD
(004-8C) PHTL050
25
20
15-17
VD
(004-8C) PHTL060
26
18
15-16
DG
HIC1
35 N.U.
N.U.44
48 N.U.
+34V
D109
RD6.8PB X 2
D108
66
VD
(004-8C) PHTL070
70
82
16-17
VD
(004-8C) PHTL080
71
79
16-16
VD
(004-8C) PHTL090
69
81
16-15
VD
(004-8B) PHTL100
28
16
15-14
VD
(004-8B) PHTL110
72
77
16-13
VD
(004-8B) PHTL120
73
75
16-12
DG

Figure 7-5 Mother Board (G8ESP) Circuit Diagram (6 of 9)

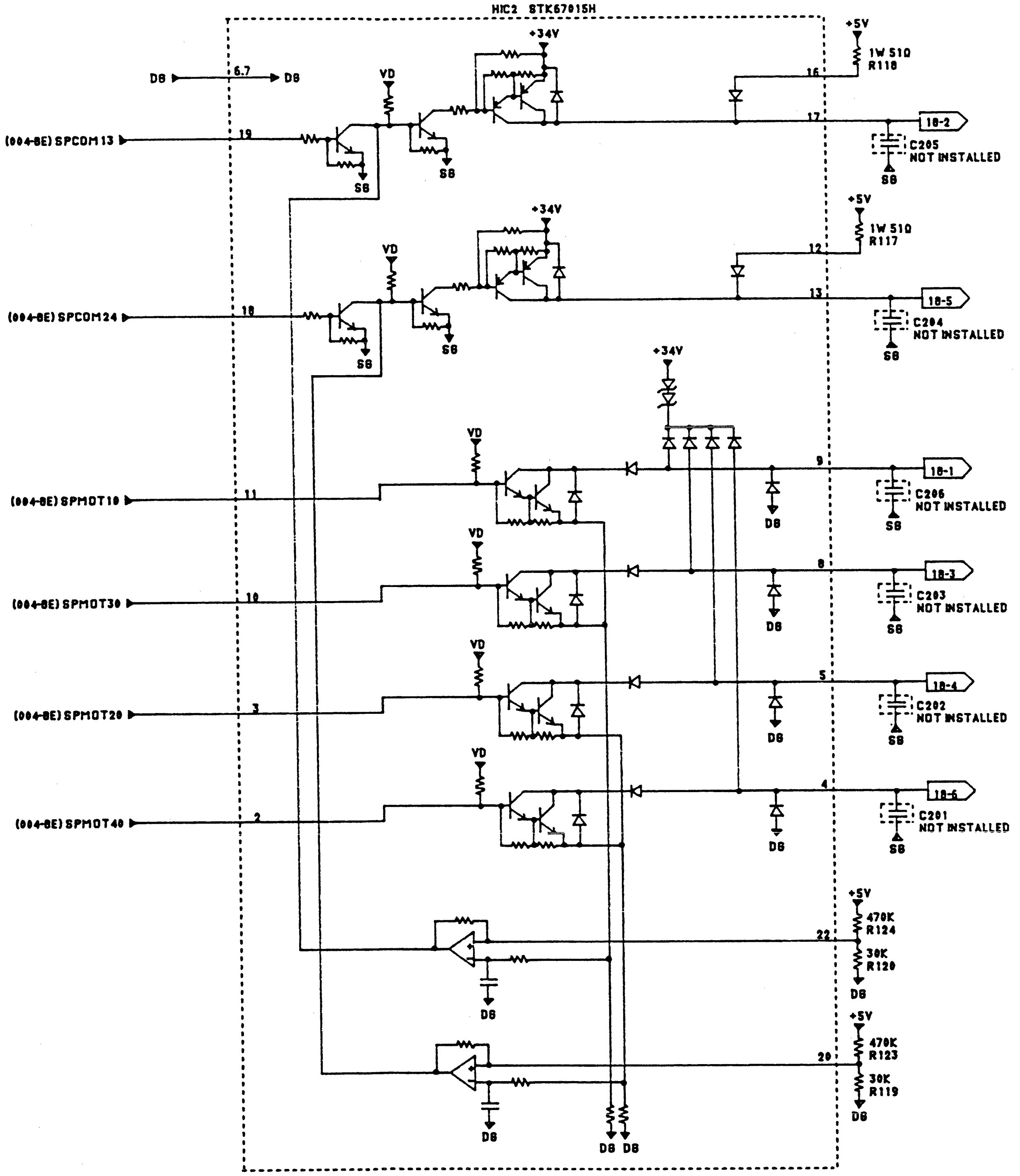

HIC2 STK67015H
+34V
+5V
1W 51Ω
R118
D8
6.7
D8
VD
16
17
(004-8E) SPCOM13
19
18-2
C205
NOT INSTALLED
S8
S8
S8
+34V
+5V
1W 51Ω
R117
VD
12
13
(004-8E) SPCOM24
18
18-5
C204
NOT INSTALLED
S8
S8
S8
+34V
VD
9
18-1
(004-8E) SPMOT10
11
C206
NOT INSTALLED
D8
S8
VD
8
18-3
(004-8E) SPMOT30
10
C203
NOT INSTALLED
D8
S8
VD
5
18-4
(004-8E) SPMOT20
3
C202
NOT INSTALLED
D8
S8
VD
4
18-6
(004-8E) SPMOT40
2
C201
NOT INSTALLED
D8
S8
+5V
470K
R124
22
30K
R120
D8
D8
+5V
470K
R123
20
30K
R119
D8
D8
D8 D8

Figure 7-5 Mother Board (G8ESP) Circuit Diagram (7 of 9)

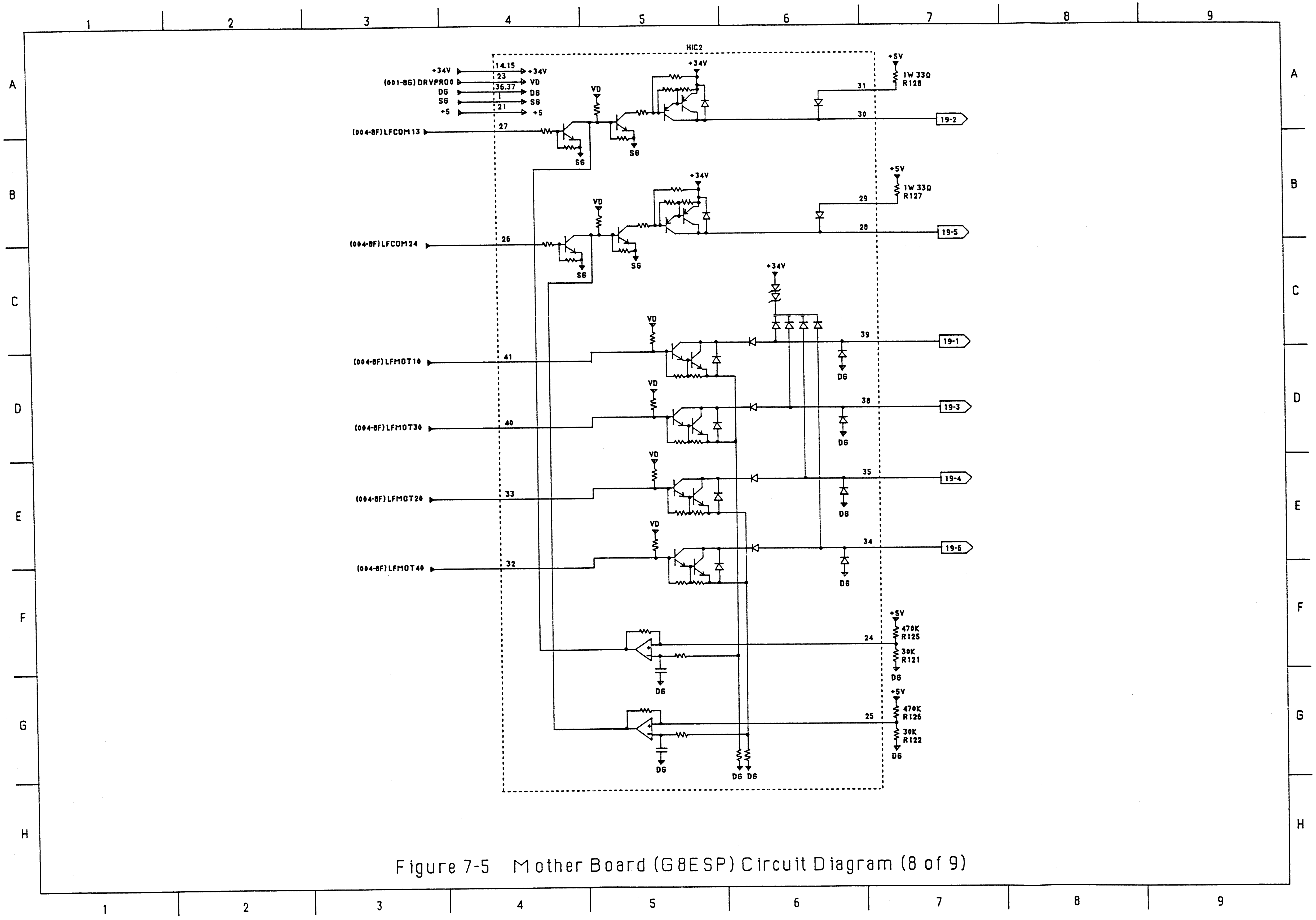

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
HIC2
+34V
(001-86) DRVPRO0
DG
SG
+5
14.15
23
36.37
1
21
+34V
VD
DG
SG
+5
(004-8F) LFCOM13
27
VD
SG
SG
+34V
+5V
1W 33Ω
R128
31
30
19-2
(004-8F) LFCOM24
26
VD
SG
SG
+34V
+5V
1W 33Ω
R127
29
28
19-5
+34V
(004-8F) LFMOT10
41
VD
39
DG
19-1
(004-8F) LFMOT30
40
VD
38
DG
19-3
(004-8F) LFMOT20
33
VD
35
DG
19-4
(004-8F) LFMOT40
32
VD
34
DG
19-6
+5V
470K
R125
24
30K
R121
DG
DG
+5V
470K
R126
25
30K
R122
DG
DG
DG DG

Figure 7-5 Mother Board (G8ESP) Circuit Diagram (8 of 9)

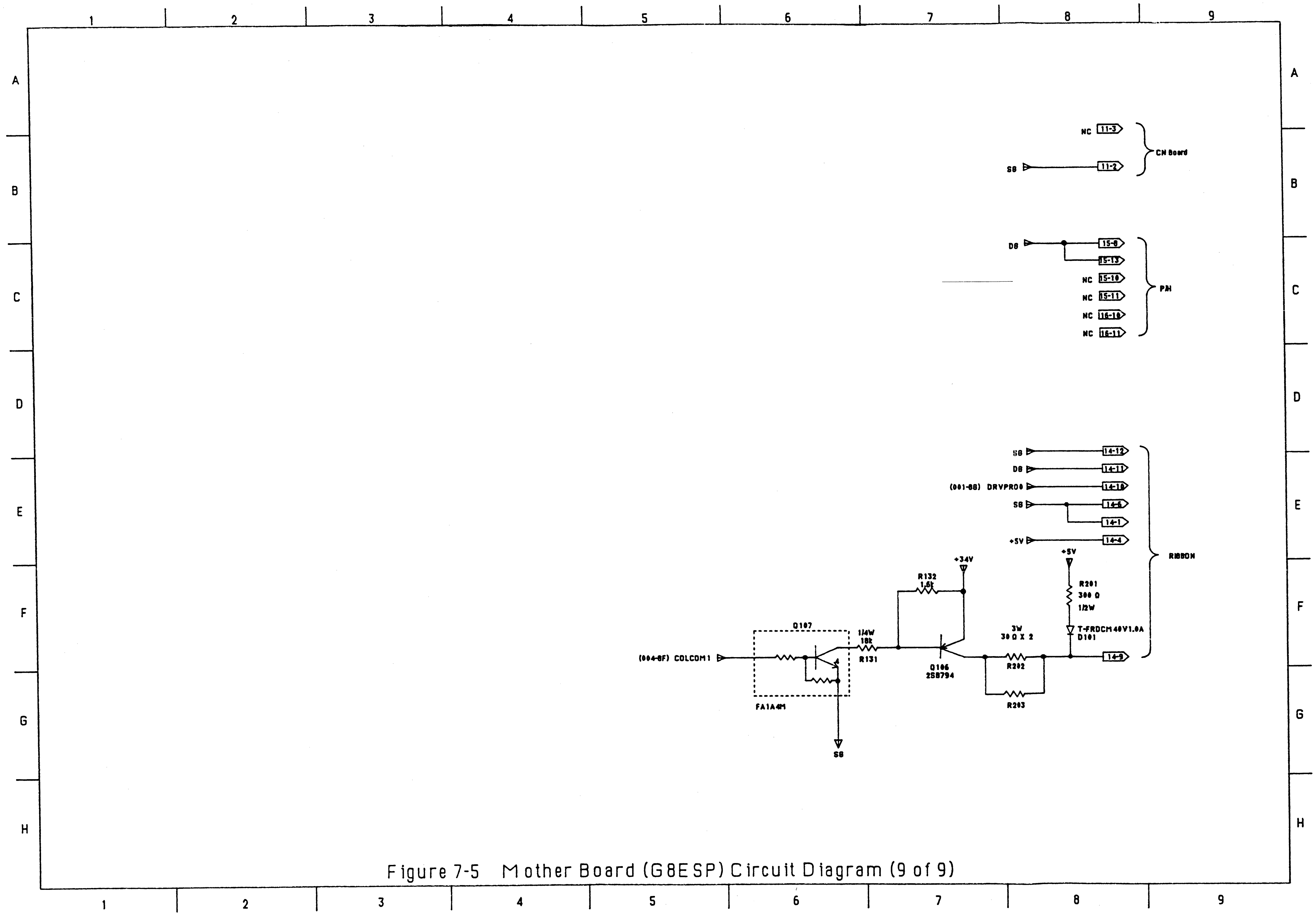

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
NC
11-3
S8
11-2
CN Board
D8
15-8
15-13
NC
15-10
NC
15-11
NC
16-10
NC
16-11
P/H
S8
14-12
D8
14-11
(001-88) DRVPRO0
14-10
S8
14-6
14-1
+5V
14-4
RIBBON
+34V
R132
1.6k
+5V
R201
300 Ω
1/2W
T-FRDCM40V1.0A
D101
Q107
1/4W
18k
R131
3W
30 Ω X 2
(004-8F) COLCOM1
Q106
2SB794
R202
14-9
R203
FA1A4M
S8

Figure 7-5 Mother Board (G8ESP) Circuit Diagram (9 of 9)

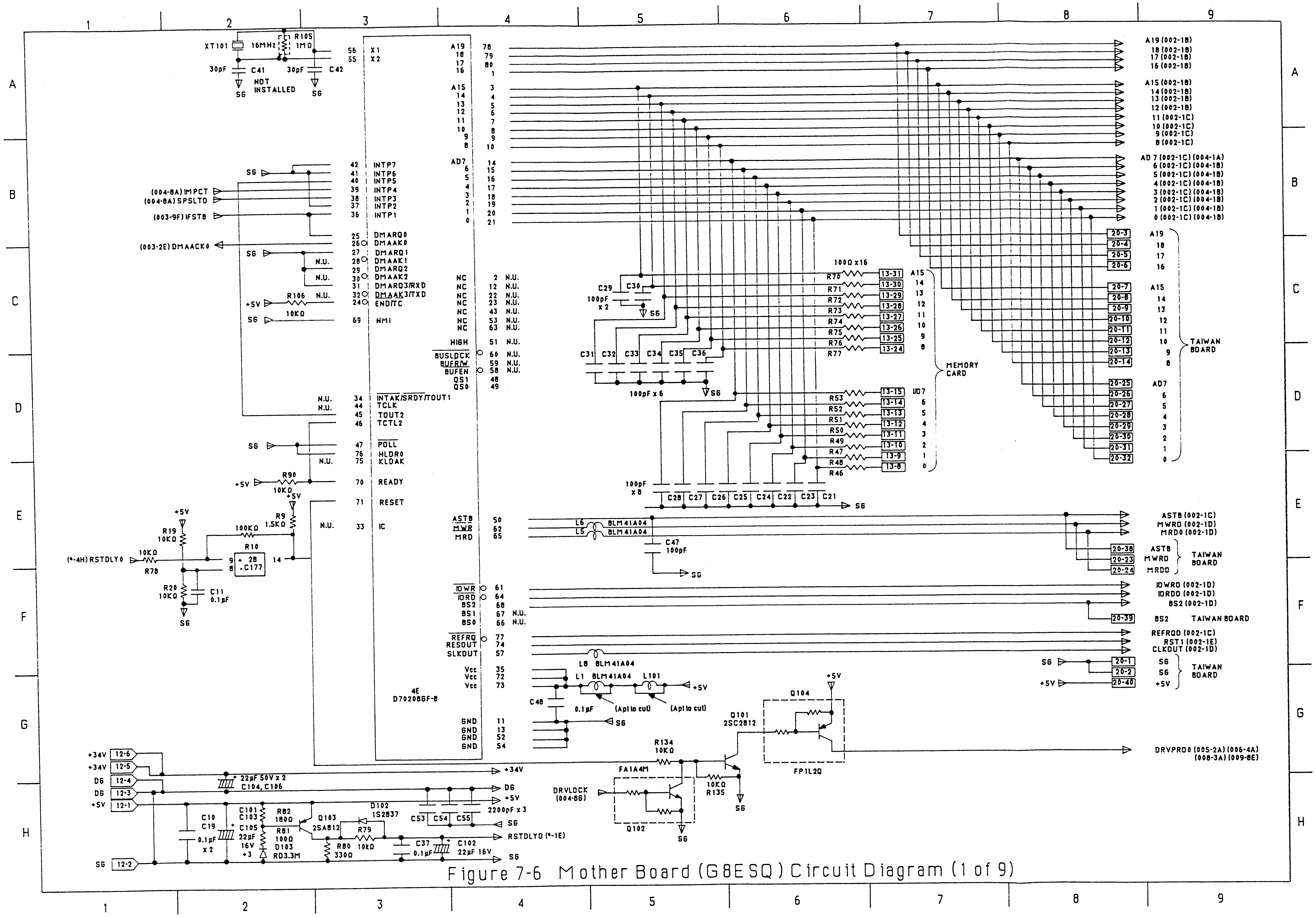

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
XT101
16MHz
R105
1MΩ
30pF
C41
30pF
C42
NOT INSTALLED
S6
56 X1
55 X2
A19
18
17
16
A15
14
13
12
11
10
9
8
AD7
6
5
4
3
2
1
0
42 INTP7
41 INTP6
40 INTP5
39 INTP4
38 INTP3
37 INTP2
36 INTP1
(004-8A) IMPCT
(004-8A) SPSLT0
(003-9F) IFSTB
25 DMARQ0
26 DMAAK0
27 DMARQ1
28 DMAAK1
29 DMARQ2
30 DMAAK2
31 DMARQ3/RXD
32 DMAAK3/TXD
24 END/TC
69 NMI
(003-2E) DMAACK0
N.U.
+5V
R106
10KΩ
34 INTAK/SRDY/TOUT1
44 TCLK
45 TOUT2
46 TCTL2
47 POLL
76 HLDRQ
75 HLDAK
70 READY
71 RESET
33 IC
R90
10KΩ
R9
1.5KΩ
100KΩ
R10
28
-C177
R19
10KΩ
(*-4H) RSTDLY0
R78
R20
10KΩ
C11
0.1μF
NC
HIGH
BUSLOCK
BUFR/W
BUFEN
QS1
QS0
ASTB
MWR
MRD
IOWR
IORD
BS2
BS1
BS0
REFRQ
RESOUT
SLKOUT
Vcc
GND
4E
D70208GF-8
A19 (002-1B)
18 (002-1B)
17 (002-1B)
16 (002-1B)
A15 (002-1B)
14 (002-1B)
13 (002-1B)
12 (002-1B)
11 (002-1C)
10 (002-1C)
9 (002-1C)
8 (002-1C)
AD 7 (002-1C) (004-1A)
6 (002-1C) (004-1B)
5 (002-1C) (004-1B)
4 (002-1C) (004-1B)
3 (002-1C) (004-1B)
2 (002-1C) (004-1B)
1 (002-1C) (004-1B)
0 (002-1C) (004-1B)
TAIWAN BOARD
MEMORY CARD
100Ω x16
R70
R71
R72
R73
R74
R75
R76
R77
R53
R52
R51
R50
R49
R47
R48
R46
C29
C30
100pF x 2
C31 C32 C33 C34 C35 C36
100pF x 6
100pF x 8
C28 C27 C26 C25 C24 C22 C23 C21
L6
L5
BLM41A04
C47
100pF
ASTB (002-1C)
MWRD (002-1D)
MRD0 (002-1D)
IOWRD (002-1D)
IORD0 (002-1D)
BS2 (002-1D)
REFRQ0 (002-1C)
RST1 (002-1E)
CLKOUT (002-1D)
L8 BLM41A04
L1 BLM41A04
L101
C48
0.1μF
(Apt to cut)
Q104
Q101
2SC2812
FP1L2Q
DRVPRD0 (005-2A) (006-4A) (008-3A) (009-8E)
R134
10KΩ
FA1A4M
DRVLOCK (004-8B)
Q102
10KΩ
R135
+34V
D6
12-6
12-5
12-4
12-3
12-1
12-2
22μF 50V x 2
C104, C106
C10
C19
0.1μF x 2
C101
C103
C105
22μF
16V
x3
R82
180Ω
R81
100Ω
D103
RD3.3M
Q103
2SA812
D102
1S2837
R79
10kΩ
R80
330Ω
C37
0.1μF
C102
22μF 16V
C53 C54 C55
2200pF x 3
RSTDLY0 (*-1E)

Figure 7-6 Mother Board (G8ESQ) Circuit Diagram (1 of 9)

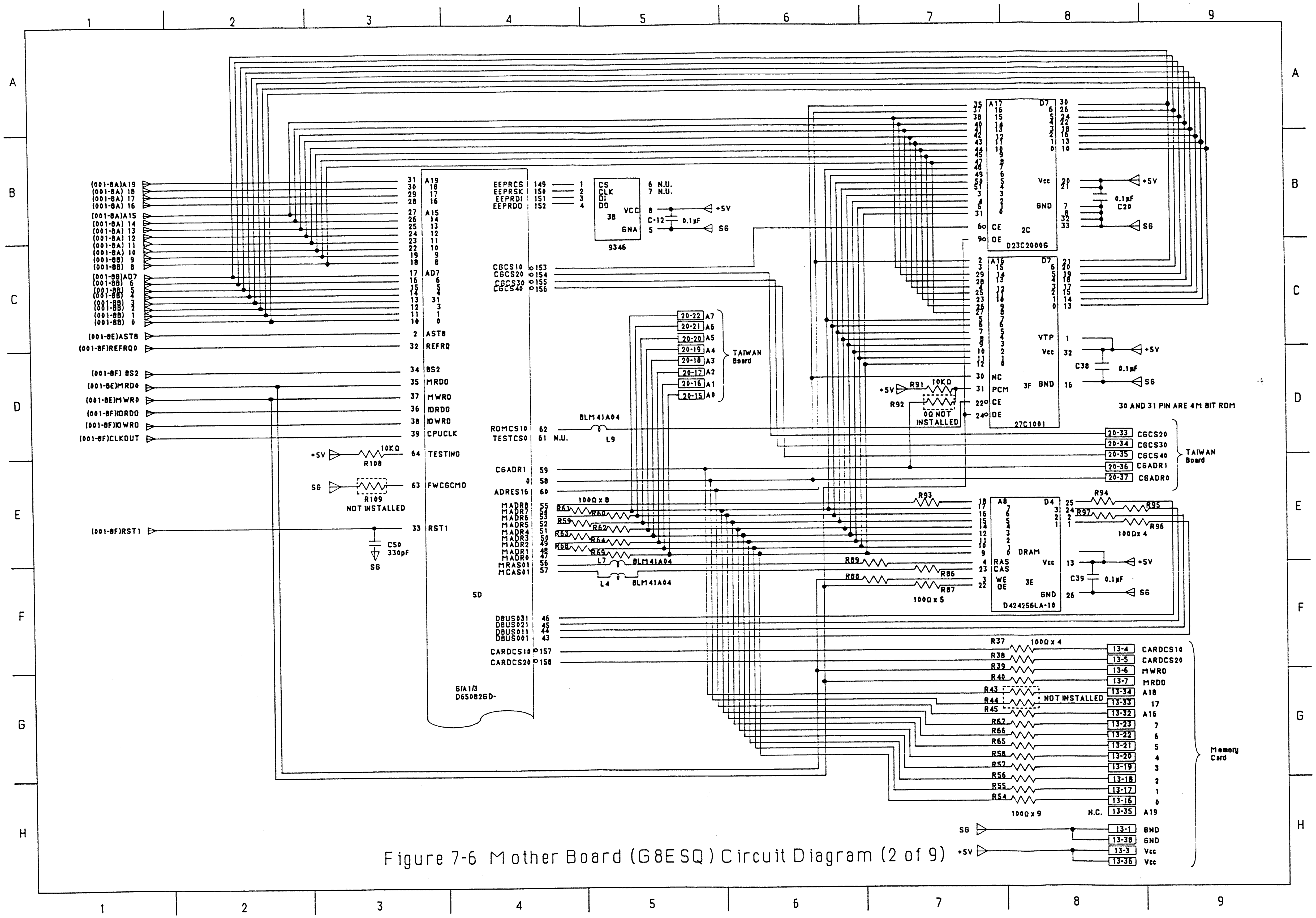

(001-8A)A19
(001-8A) 18
(001-8A) 17
(001-8A) 16
(001-8A)A15
(001-8B)AD7
(001-8E)ASTB
(001-8F)REFRQ0
(001-8F) BS2
(001-8E)MRD0
(001-8E)MWR0
(001-8F)IORD0
(001-8F)IOWR0
(001-8F)CLKOUT
(001-8F)RST1
A19
A15
AD7
ASTB
REFRQ
BS2
MRD0
MWR0
IORD0
IOWR0
CPUCLK
TESTIN0
FWCGCM0
RST1
+5V
10KΩ
R108
SG
R109
NOT INSTALLED
C50
330pF
EEPRCS
EEPRSK
EEPRDI
EEPRD0
CS
CLK
DI
DO
VCC
GNA
3B
9346
6 N.U.
7 N.U.
C-12
0.1μF
CGCS10
CGCS20
CGCS30
CGCS40
20-22 A7
20-21 A6
20-20 A5
20-19 A4
20-18 A3
20-17 A2
20-16 A1
20-15 A0
TAIWAN Board
ROMCS10
TESTCS0
N.U.
BLM41A04
L9
CGADR1
ADRES16
MADR8
MADR7
MADR6
MADR5
MADR4
MADR3
MADR2
MADR1
MADR0
MRAS01
MCAS01
100Ω x 8
L7
L4
SD
DBUS031
DBUS021
DBUS011
DBUS001
CARDCS10
CARDCS20
6/A1/3
D65082GD-
A17
D7
Vcc
GND
CE
OE
2C
D23C2000G
A16
VTP
NC
PCM
3F
27C1001
R91
10KΩ
R92
0Ω NOT INSTALLED
C38
C20
30 AND 31 PIN ARE 4M BIT ROM
20-33 CGCS20
20-34 CGCS30
20-35 CGCS40
20-36 CGADR1
20-37 CGADR0
TAIWAN Board
R93
R94
R95
R96
R97
100Ω x 4
A8
D4
RAS
CAS
WE
OE
DRAM
3E
D424256LA-10
R89
R88
R86
R87
100Ω x 5
C39
R37
R38
R39
R40
R43
R44
R45
R67
R66
R65
R58
R57
R56
R55
R54
100Ω x 9
N.C.
13-4 CARDCS10
13-5 CARDCS20
13-6 MWR0
13-7 MRD0
13-34 A18
13-33 17
13-32 A16
13-23 7
13-22 6
13-21 5
13-20 4
13-19 3
13-18 2
13-17 1
13-16 0
13-35 A19
13-1 GND
13-38 GND
13-3 Vcc
13-36 Vcc
Memory Card
1 2 3 4 5 6 7 8 9
A B C D E F G H

Figure 7-6 Mother Board (G8ESQ) Circuit Diagram (2 of 9)

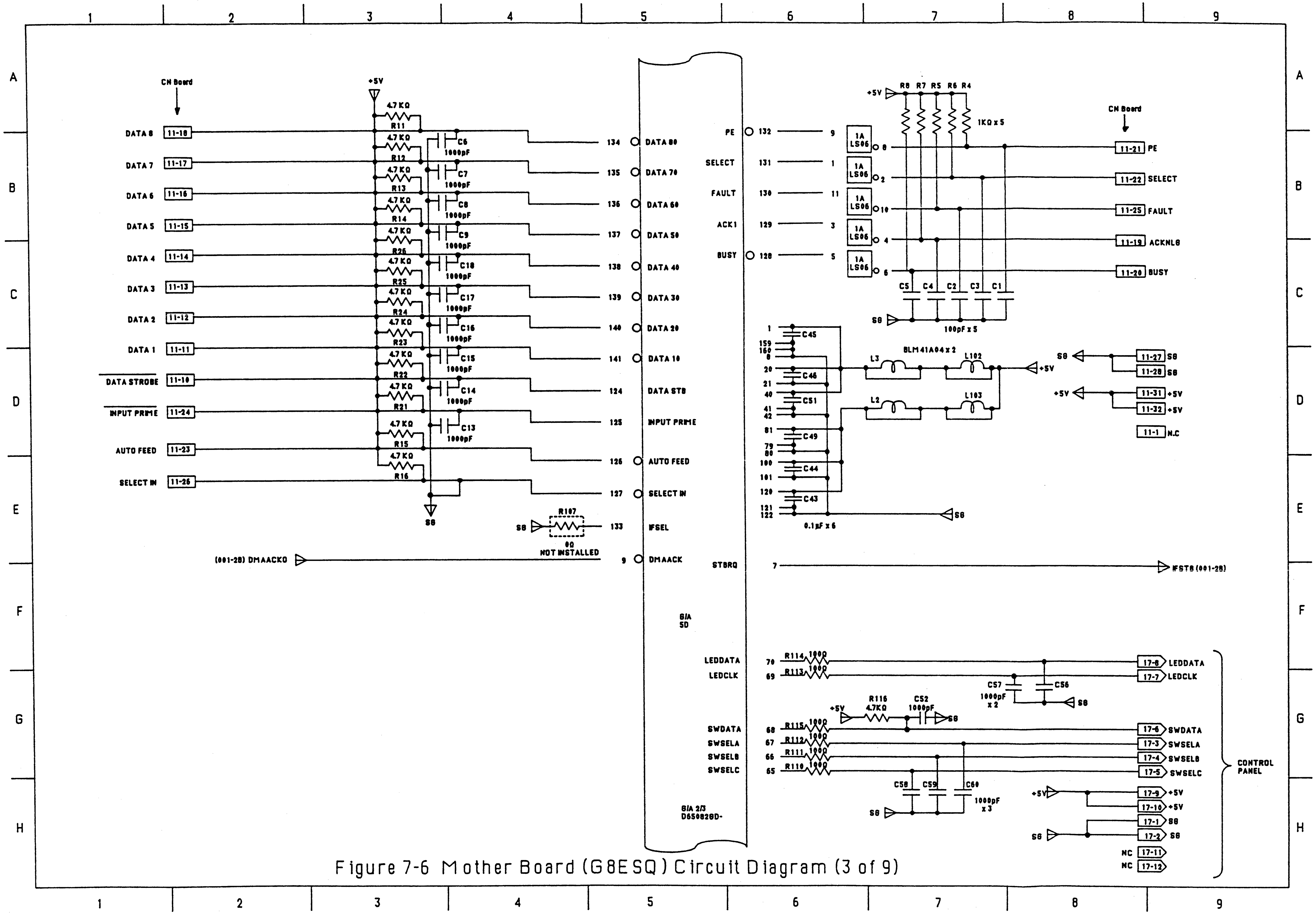

CN Board
DATA 8
DATA 7
DATA 6
DATA 5
DATA 4
DATA 3
DATA 2
DATA 1
DATA STROBE
INPUT PRIME
AUTO FEED
SELECT IN
11-18
11-17
11-16
11-15
11-14
11-13
11-12
11-11
11-10
11-24
11-23
11-26
+5V
4.7 KΩ
R11
R12
R13
R14
R26
R25
R24
R23
R22
R21
R15
R16
C6
C7
C8
C9
C18
C17
C16
C15
C14
C13
1000pF
SG
R107
0Ω
NOT INSTALLED
(001-28) DMAACKO
134 DATA 80
135 DATA 70
136 DATA 60
137 DATA 50
138 DATA 40
139 DATA 30
140 DATA 20
141 DATA 10
124 DATA STB
125 INPUT PRIME
126 AUTO FEED
127 SELECT IN
133 IFSEL
9 DMAACK
PE 132
SELECT 131
FAULT 130
ACK1 129
BUSY 128
STBRQ 7
G/A
SD
G/A 2/3
D65082GD-
1A LS06
R8 R7 R5 R6 R4
1KΩ x 5
11-21 PE
11-22 SELECT
11-25 FAULT
11-19 ACKNLG
11-20 BUSY
C5 C4 C2 C3 C1
100pF x 5
C45
C46
C51
C49
C44
C43
0.1µF x 6
BLM41A04 x 2
L3
L102
L2
L103
11-27 SG
11-28 SG
11-31 +5V
11-32 +5V
11-1 N.C
IFSTB (001-28)
LEDDATA
LEDCLK
SWDATA
SWSELA
SWSELB
SWSELC
R114
R113
R115
R112
R111
R110
100Ω
R116
4.7KΩ
C52
1000pF
C57
C56
1000pF x 2
C58
C59
C60
1000pF x 3
17-8 LEDDATA
17-7 LEDCLK
17-6 SWDATA
17-3 SWSELA
17-4 SWSELB
17-5 SWSELC
17-9 +5V
17-10 +5V
17-1 SG
17-2 SG
NC 17-11
NC 17-12
CONTROL PANEL
A B C D E F G H
1 2 3 4 5 6 7 8 9

Figure 7-6 Mother Board (G8ESQ) Circuit Diagram (3 of 9)

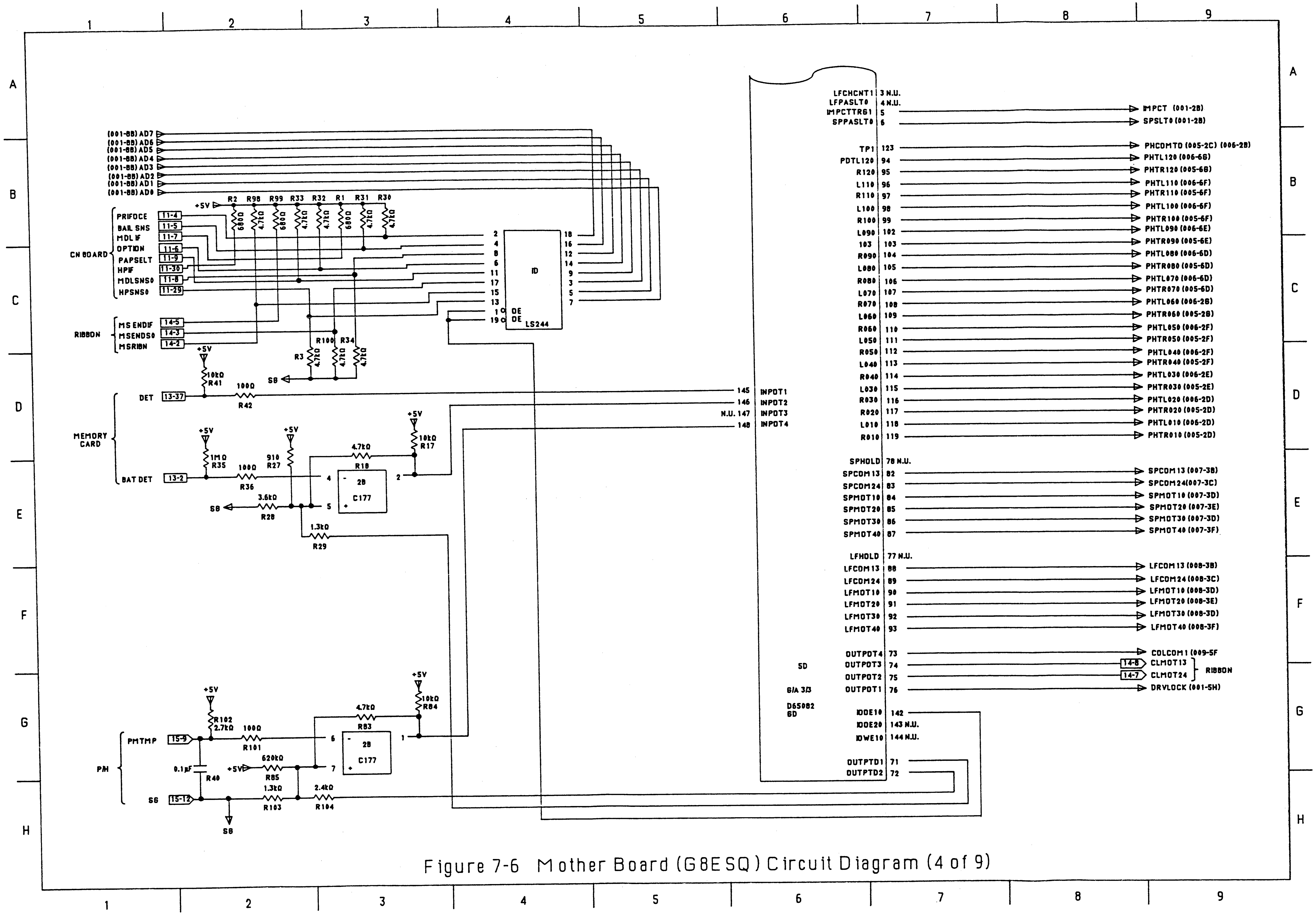

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
(001-8B) AD7
(001-8B) AD6
(001-8B) AD5
(001-8B) AD4
(001-8B) AD3
(001-8B) AD2
(001-8B) AD1
(001-8B) AD0
+5V
R2
R98
R99
R33
R32
R1
R31
R30
680Ω
4.7kΩ
680Ω
4.7kΩ
4.7kΩ
680Ω
4.7kΩ
4.7kΩ
CN BOARD
PRIFDCE 11-4
BAIL SNS 11-5
MDL IF 11-7
OPTION 11-6
PAPSELT 11-9
HPIF 11-30
MDLSNS0 11-8
HPSNS0 11-29
RIBBON
MS ENDIF 14-5
MSENDS0 14-3
MSRIBN 14-2
2
4
8
6
11
17
15
13
1 OE
19 OE
18
16
12
14
9
3
5
7
ID
LS244
R100
R34
R3
4.7kΩ
4.7kΩ
4.7kΩ
SB
+5V
10kΩ
R41
100Ω
R42
MEMORY CARD
DET 13-37
BAT DET 13-2
+5V
1MΩ
R35
100Ω
R36
+5V
910
R27
3.6kΩ
R28
SB
1.3kΩ
R29
4.7kΩ
R18
+5V
10kΩ
R17
4
5
2
2B
C177
145 INPOT1
146 INPOT2
N.U. 147 INPOT3
148 INPOT4
P/H
PMTMP 15-9
S6 15-12
+5V
R102
2.7kΩ
100Ω
R101
0.1μF
R40
+5V
620kΩ
R85
1.3kΩ
R103
2.4kΩ
R104
SB
4.7kΩ
R83
+5V
10kΩ
R84
6
7
1
2B
C177
5D
G/A 3/3
D65082
6D
LFCHCNT1 3 N.U.
LFPASLT0 4 N.U.
IMPCTTRG1 5
IMPCT (001-2B)
SPPASLT0 6
SPSLT0 (001-2B)
TP1 123
PHCOMT0 (005-2C) (006-2B)
PDTL120 94
PHTL120 (006-6B)
R120 95
PHTR120 (005-6B)
L110 96
PHTL110 (006-6F)
R110 97
PHTR110 (005-6F)
L100 98
PHTL100 (006-6F)
R100 99
PHTR100 (005-6F)
L090 102
PHTL090 (006-6E)
103 103
PHTR090 (005-6E)
R090 104
PHTL080 (006-6D)
L080 105
PHTR080 (005-6D)
R080 106
PHTL070 (006-6D)
L070 107
PHTR070 (005-6D)
R070 108
PHTL060 (006-2B)
L060 109
PHTR060 (005-2B)
R060 110
PHTL050 (006-2F)
L050 111
PHTR050 (005-2F)
R050 112
PHTL040 (006-2F)
L040 113
PHTR040 (005-2F)
R040 114
PHTL030 (006-2E)
L030 115
PHTR030 (005-2E)
R030 116
PHTL020 (006-2D)
R020 117
PHTR020 (005-2D)
L010 118
PHTL010 (006-2D)
R010 119
PHTR010 (005-2D)
SPHOLD 78 N.U.
SPCOM13 82
SPCOM13 (007-3B)
SPCOM24 83
SPCOM24(007-3C)
SPMOT10 84
SPMOT10 (007-3D)
SPMOT20 85
SPMOT20 (007-3E)
SPMOT30 86
SPMOT30 (007-3D)
SPMOT40 87
SPMOT40 (007-3F)
LFHOLD 77 N.U.
LFCOM13 88
LFCOM13 (008-3B)
LFCOM24 89
LFCOM24 (008-3C)
LFMOT10 90
LFMOT10 (008-3D)
LFMOT20 91
LFMOT20 (008-3E)
LFMOT30 92
LFMOT30 (008-3D)
LFMOT40 93
LFMOT40 (008-3F)
OUTPOT4 73
COLCOM1 (009-5F
OUTPOT3 74
14-8 CLMOT13
OUTPOT2 75
14-7 CLMOT24
RIBBON
OUTPOT1 76
DRVLOCK (001-5H)
IOOE10 142
IOOE20 143 N.U.
IOWE10 144 N.U.
OUTPTD1 71
OUTPTD2 72

Figure 7-6 Mother Board (G8ESQ) Circuit Diagram (4 of 9)

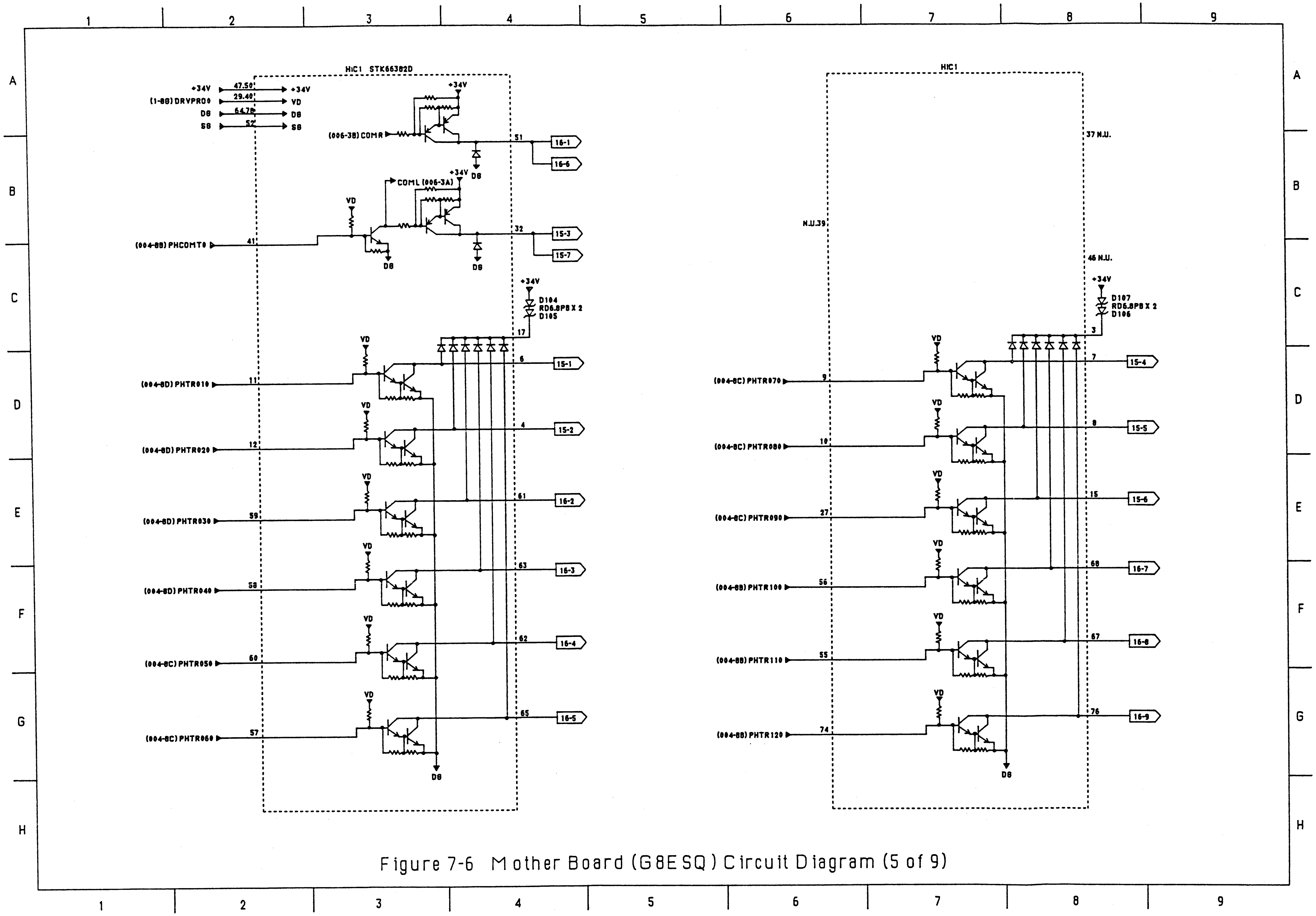

HIC1 STK66382D
+34V
47.50
+34V
(1-8B) DRVPRO0
29.40
VD
D8
64.78
D8
S8
52
S8
(006-3B) COMR
51
16-1
16-6
COML (006-3A)
VD
(004-8B) PHCOMT0
41
32
15-3
15-7
D8
D104
RD6.8PB X 2
D105
17
(004-8D) PHTR010
11
6
15-1
(004-8D) PHTR020
12
4
15-2
(004-8D) PHTR030
59
61
16-2
(004-8D) PHTR040
58
63
16-3
(004-8C) PHTR050
60
62
16-4
(004-8C) PHTR060
57
65
16-5
HIC1
37 N.U.
N.U.39
46 N.U.
D107
RD6.8PB X 2
D106
3
(004-8C) PHTR070
9
7
15-4
(004-8C) PHTR080
10
8
15-5
(004-8C) PHTR090
27
15
15-6
(004-8B) PHTR100
56
68
16-7
(004-8B) PHTR110
55
67
16-8
(004-8B) PHTR120
74
76
16-9
1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H

Figure 7-6 Mother Board (G8ESQ) Circuit Diagram (5 of 9)

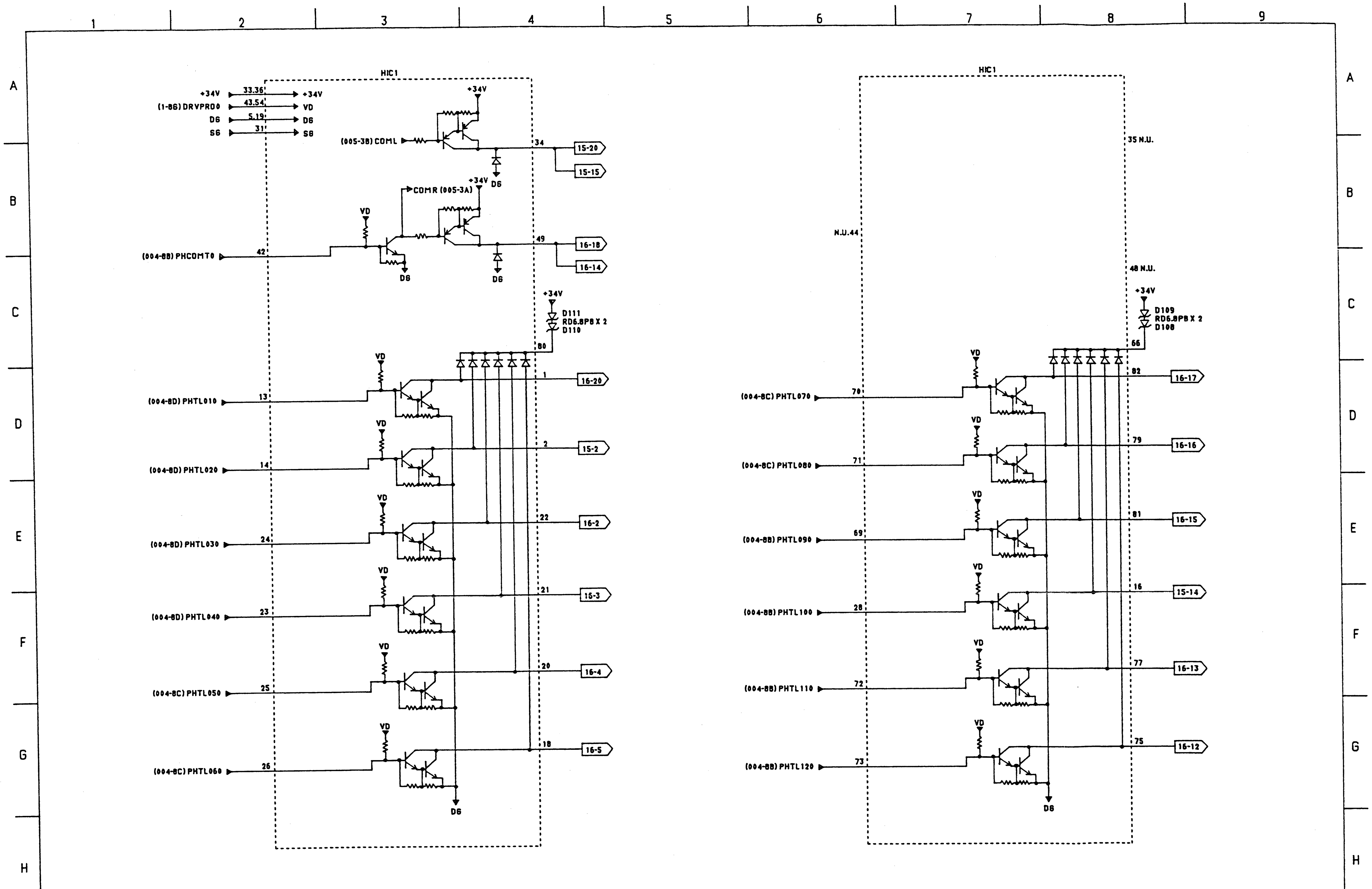

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
HIC1
+34V
33.36
+34V
(1-86) DRVPR00
43.54
VD
D6
5.19
D6
S6
31
S8
+34V
(005-38) COML
34
15-20
15-15
+34V
D6
COMR (005-3A)
VD
(004-88) PHCOMT0
42
49
16-18
16-14
D6
D6
+34V
D111
RD6.8P8 X 2
D110
80
VD
(004-8D) PHTL010
13
1
16-20
VD
(004-8D) PHTL020
14
2
15-2
VD
(004-8D) PHTL030
24
22
16-2
VD
(004-8D) PHTL040
23
21
15-3
VD
(004-8C) PHTL050
25
20
16-4
VD
(004-8C) PHTL060
26
18
16-5
D6
HIC1
35 N.U.
N.U.44
48 N.U.
+34V
D109
RD6.8P8 X 2
D108
66
VD
(004-8C) PHTL070
70
82
16-17
VD
(004-8C) PHTL080
71
79
16-16
VD
(004-88) PHTL090
69
81
16-15
VD
(004-88) PHTL100
28
16
15-14
VD
(004-88) PHTL110
72
77
16-13
VD
(004-88) PHTL120
73
75
16-12
D6

Figure 7-6 Mother Board (G8ESQ) Circuit Diagram (6 of 9)

1
2
3
4
5
6
7
8
9

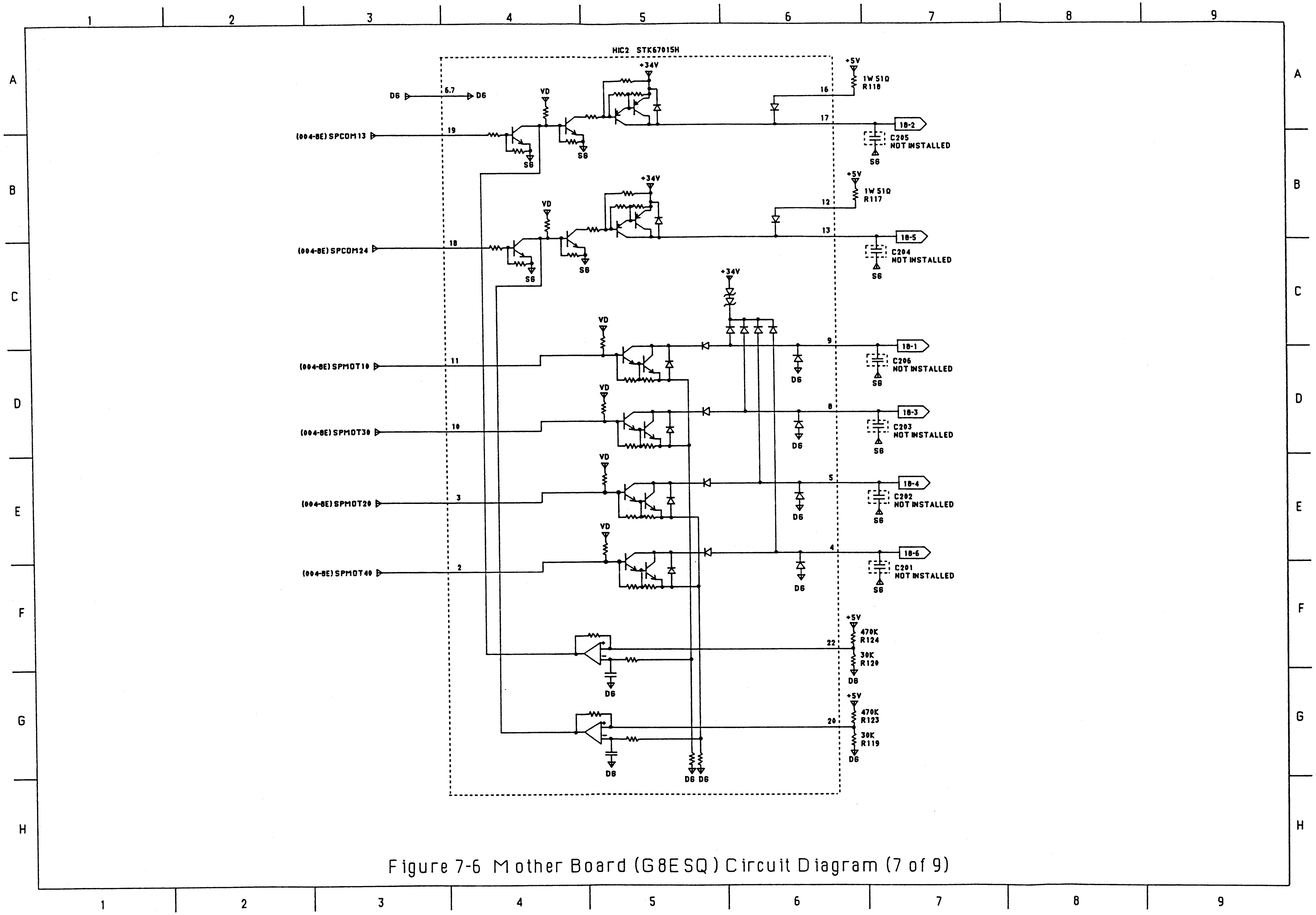

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
HIC2 STK67015H
+34V
+5V
1W 51Ω
R118
D6
6.7
D6
VD
16
17
(004-8E) SPCOM13
19
18-2
C205
NOT INSTALLED
S6
+34V
+5V
1W 51Ω
R117
VD
12
13
18-5
(004-8E) SPCOM24
18
C204
NOT INSTALLED
S6
+34V
VD
9
18-1
(004-8E) SPMOT10
11
C206
NOT INSTALLED
D6
S6
VD
8
18-3
(004-8E) SPMOT30
10
C203
NOT INSTALLED
D6
S6
VD
5
18-4
(004-8E) SPMOT20
3
C202
NOT INSTALLED
D6
S6
VD
4
18-6
(004-8E) SPMOT40
2
C201
NOT INSTALLED
D6
S6
+5V
470K
R124
22
30K
R120
D6
+5V
470K
R123
20
30K
R119
D6
D6 D6

Figure 7-6 Mother Board (G8ESQ) Circuit Diagram (7 of 9)

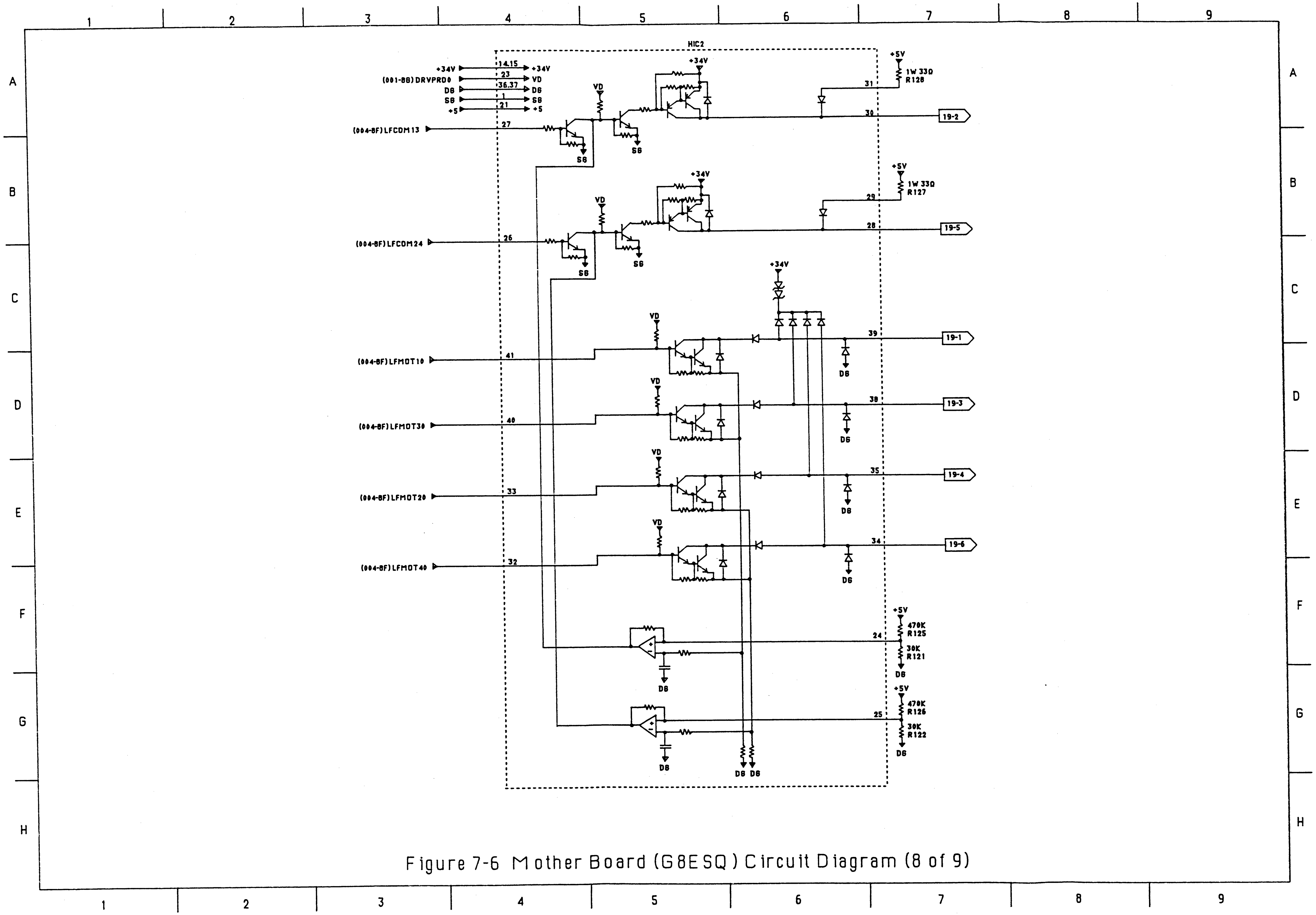

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
HIC2
+34V
(001-8B)DRVPRD0
D6
S6
+5
14.15
23
36.37
1
21
VD
(004-8F)LFCOM13
27
(004-8F)LFCOM24
26
+5V
1W 33Ω
R128
31
30
19-2
1W 33Ω
R127
29
28
19-5
(004-8F)LFMOT10
41
39
19-1
(004-8F)LFMOT30
40
38
19-3
(004-8F)LFMOT20
33
35
19-4
(004-8F)LFMOT40
32
34
19-6
470K
R125
30K
R121
24
470K
R126
30K
R122
25
D6 D6

Figure 7-6 Mother Board (G8ESQ) Circuit Diagram (8 of 9)

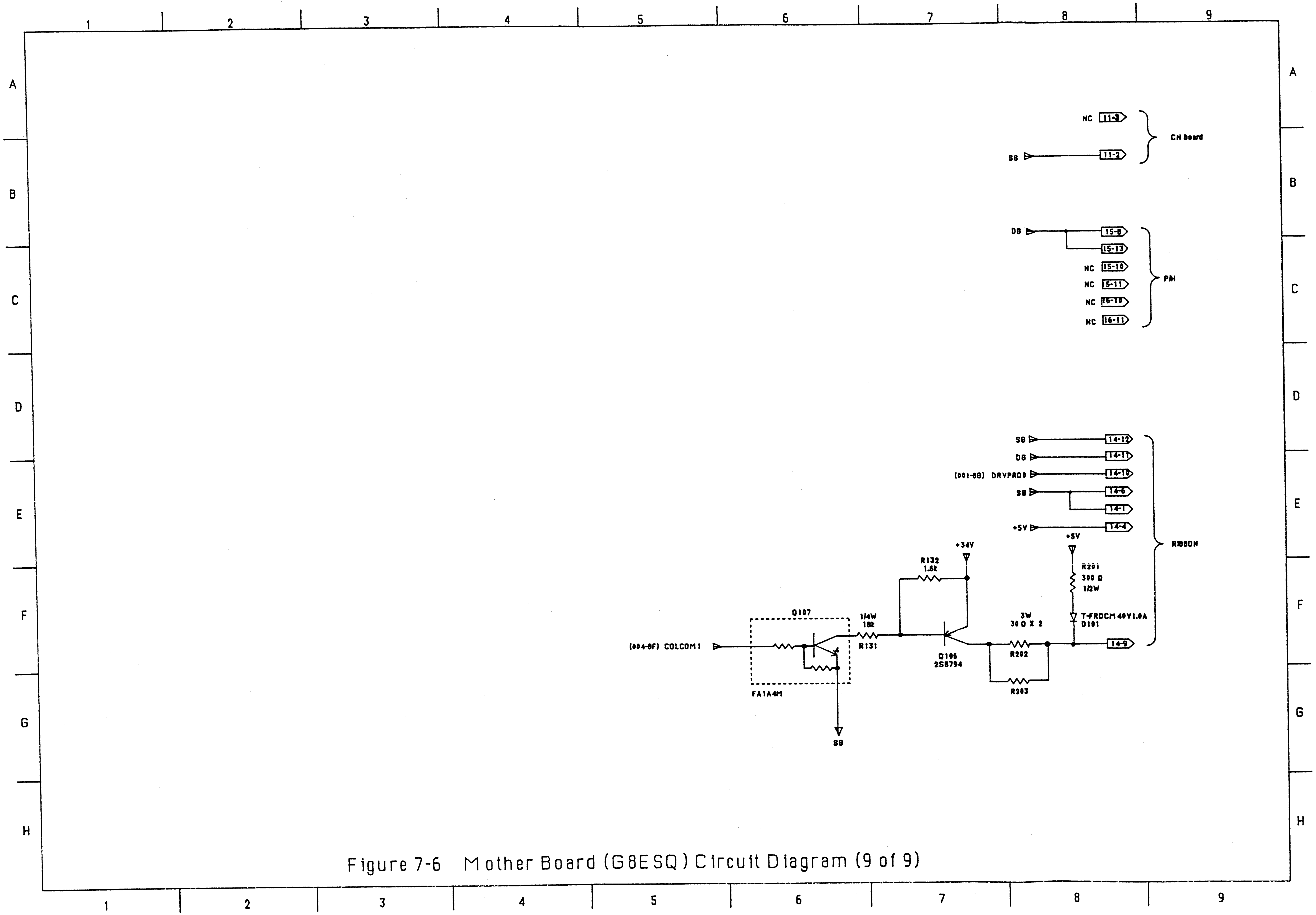

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
NC
11-3
S8
11-2
CN Board
D8
15-8
15-13
NC
15-10
NC
15-11
NC
16-10
NC
16-11
P/H
S8
14-12
D8
14-11
(001-8B) DRVPRD0
14-10
S8
14-6
14-1
+5V
14-4
RIBBON
+34V
R132
1.5k
+5V
R201
300 Ω
1/2W
T-FRDCM40V1.0A
D101
Q107
1/4W
18k
R131
3W
30 Ω X 2
(004-8F) COLCOM1
Q106
2SB794
R202
14-9
R203
FA1A4M
S8

Figure 7-6 Mother Board (G8ESQ) Circuit Diagram (9 of 9)

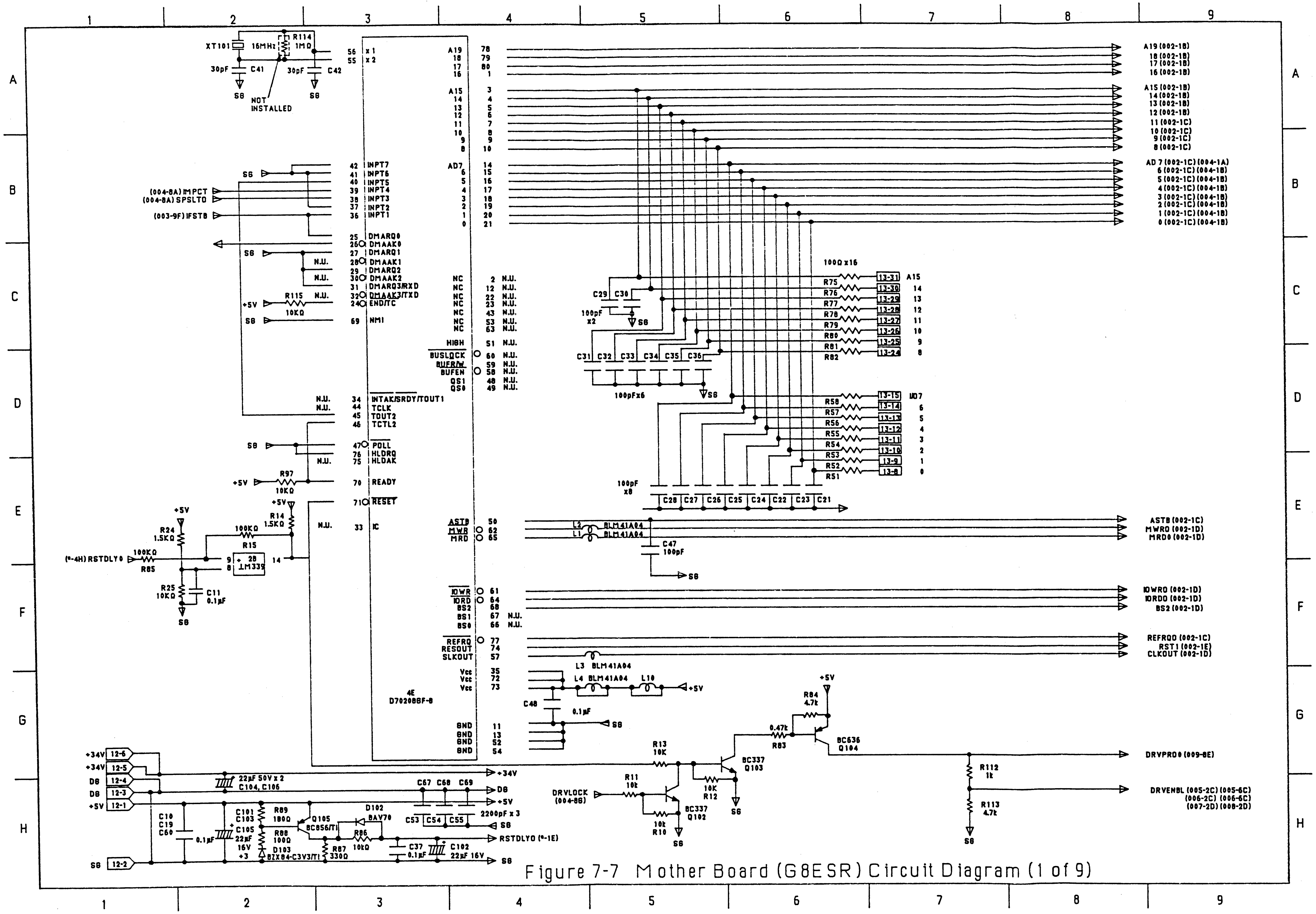

XT101
16MHz
R114
1MΩ
30pF
C41
C42
SG
NOT INSTALLED
4E
D70208BF-8
x1
x2
A19
A15
AD7
INPT7
INPT6
INPT5
INPT4
INPT3
INPT2
INPT1
(004-8A) IMPCT
(004-8A) SPSLTD
(003-9F) IFSTB
DMARQ0
DMAAK0
DMARQ1
DMAAK1
DMARQ2
DMAAK2
DMARQ3/RXD
DMAAK3/TXD
END/TC
NMI
R115
10KΩ
+5V
N.U.
NC
HIGH
BUSLOCK
BUFR/W
BUFEN
QS1
QS0
INTAK/SRDY/TOUT1
TCLK
TOUT2
TCTL2
POLL
HLDRQ
HLDAK
READY
RESET
IC
R97
10KΩ
R14
1.5KΩ
R24
1.5KΩ
R15
100KΩ
R85
(*-4H) RSTDLY0
LM339
R25
10KΩ
C11
0.1μF
ASTB
MWR
MRD
IOWR
IORD
BS2
BS1
BS0
REFRQ
RESOUT
SLKOUT
Vcc
GND
A19 (002-1B)
18 (002-1B)
17 (002-1B)
16 (002-1B)
A15 (002-1B)
14 (002-1B)
13 (002-1B)
12 (002-1B)
11 (002-1C)
10 (002-1C)
9 (002-1C)
8 (002-1C)
AD 7 (002-1C) (004-1A)
6 (002-1C) (004-1B)
5 (002-1C) (004-1B)
4 (002-1C) (004-1B)
3 (002-1C) (004-1B)
2 (002-1C) (004-1B)
1 (002-1C) (004-1B)
0 (002-1C) (004-1B)
100Ω x16
R75
R76
R77
R78
R79
R80
R81
R82
R58
R57
R56
R55
R54
R53
R52
R51
C29
C30
100pF x2
C31
C32
C33
C34
C35
C36
100pFx6
100pF x8
C28
C27
C26
C25
C24
C22
C23
C21
L2
L1
BLM41A04
C47
100pF
ASTB (002-1C)
MWRQ (002-1D)
MRDQ (002-1D)
IOWRQ (002-1D)
IORDQ (002-1D)
BS2 (002-1D)
REFRQQ (002-1C)
RST1 (002-1E)
CLKOUT (002-1D)
L3 BLM41A04
L4 BLM41A04
L10
C48
0.1μF
+34V
D8
+5V
22μF 50V x 2
C104, C106
C67
C68
C69
2200pF x 3
C53
C54
C55
C10
C19
C60
C101
C103
C105
22μF
16V
R89
180Ω
R88
100Ω
D103
BZX84-C3V3/T1
Q105
BC856/T1
D102
BAV70
R86
10kΩ
R87
330Ω
C37
C102
22μF 16V
RSTDLY0 (*-1E)
DRVLOCK (004-8G)
R11
10k
R10
R12
BC337
Q102
R13
10K
BC337
Q103
R83
0.47k
R84
4.7k
BC636
Q104
R112
1k
R113
4.7k
DRVPRO0 (009-8E)
DRVENBL (005-2C) (005-6C) (006-2C) (006-6C) (007-2D) (008-2D)

Figure 7-7 Mother Board (G8ESR) Circuit Diagram (1 of 9)

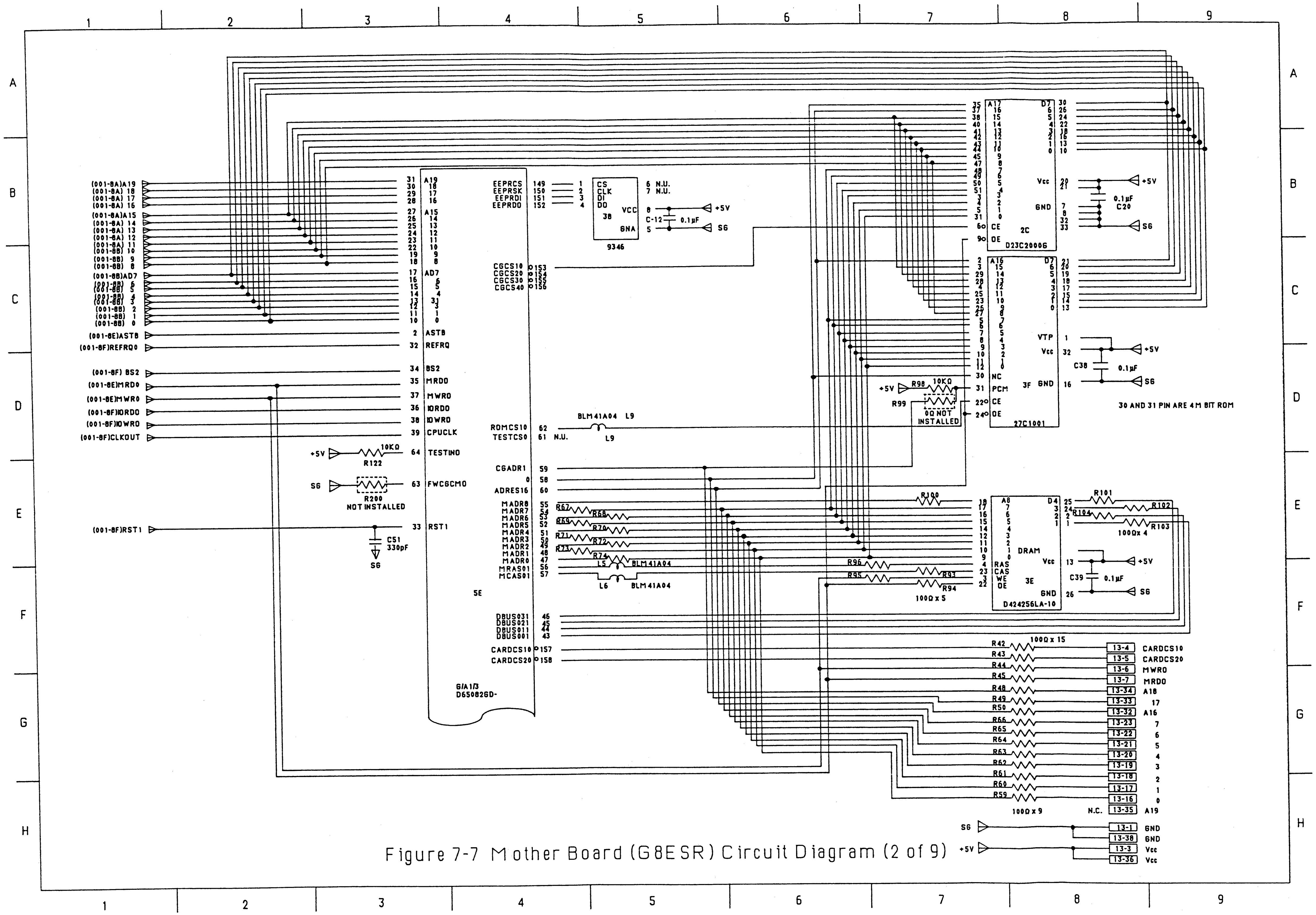

1 2 3 4 5 6 7 8 9
A B C D E F G H
(001-8A)A19
(001-8A) 18
(001-8A) 17
(001-8A) 16
(001-8A)A15
(001-8A) 14
(001-8A) 13
(001-8A) 12
(001-8A) 11
(001-8B) 10
(001-8B) 9
(001-8B) 8
(001-8B)AD7
(001-8B) 6
(001-8B) 5
(001-8B) 4
(001-8B) 3
(001-8B) 2
(001-8B) 1
(001-8B) 0
(001-8E)ASTB
(001-8F)REFRQ0
(001-8F) BS2
(001-8E)MRD0
(001-8E)MWR0
(001-8F)IORD0
(001-8F)IOWR0
(001-8F)CLKOUT
(001-8F)RST1
A19 18 17 16 A15 14 13 12 11 10 9 8 AD7 6 5 4 3 2 1 0
ASTB
REFRQ
BS2
MRD0
MWR0
IORD0
IOWR0
CPUCLK
TESTIN0
FWCGCM0
RST1
+5V
R122
10KΩ
S6
R200
NOT INSTALLED
CS1
330pF
5E
G/A1/3
D65082GD-
EEPRCS 149
EEPRSK 150
EEPRDI 151
EEPRD0 152
CS CLK DI DO
VCC GNA
3B
9346
6 N.U.
7 N.U.
C-12
0.1μF
CGCS10 153
CGCS20 154
CGCS30 155
CGCS40 156
ROMCS10 62
TESTCS0 61 N.U.
BLM41A04 L9
L9
CGADR1 59
0 58
ADRES16 60
MADR8 55
MADR7 54
MADR6 53
MADR5 52
MADR4 51
MADR3 50
MADR2 49
MADR1 48
MADR0 47
MRAS01 56
MCAS01 57
R67 R68 R69 R70 R71 R72 R73 R74
L5 BLM41A04
L6 BLM41A04
DBUS031 46
DBUS021 45
DBUS011 44
DBUS001 43
CARDCS10 157
CARDCS20 158
A17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0
CE OE
D7 6 5 4 3 2 1 0
Vcc GND
2C
D23C2000G
0.1μF
C20
A16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0
NC PCM CE OE
VTP Vcc
3F GND
27C1001
C38
R98 10KΩ
R99
0Ω NOT INSTALLED
30 AND 31 PIN ARE 4M BIT ROM
R100
A8 7 6 5 4 3 2 1 0
RAS CAS WE OE
D4 3 2 1
DRAM
3E
Vcc GND
D424256LA-10
R101 R102 R103 R104
100Ω x 4
R96 R95 R93 R94
100Ω x 5
C39
0.1μF
R42 R43 R44 R45 R48 R49 R50 R66 R65 R64 R63 R62 R61 R60 R59
100Ω x 15
100Ω x 9
N.C.
13-4 CARDCS10
13-5 CARDCS20
13-6 MWR0
13-7 MRD0
13-34 A18
13-33 17
13-32 A16
13-23 7
13-22 6
13-21 5
13-20 4
13-19 3
13-18 2
13-17 1
13-16 0
13-35 A19
13-1 GND
13-38 GND
13-3 Vcc
13-36 Vcc

Figure 7-7 Mother Board (G8ESR) Circuit Diagram (2 of 9)

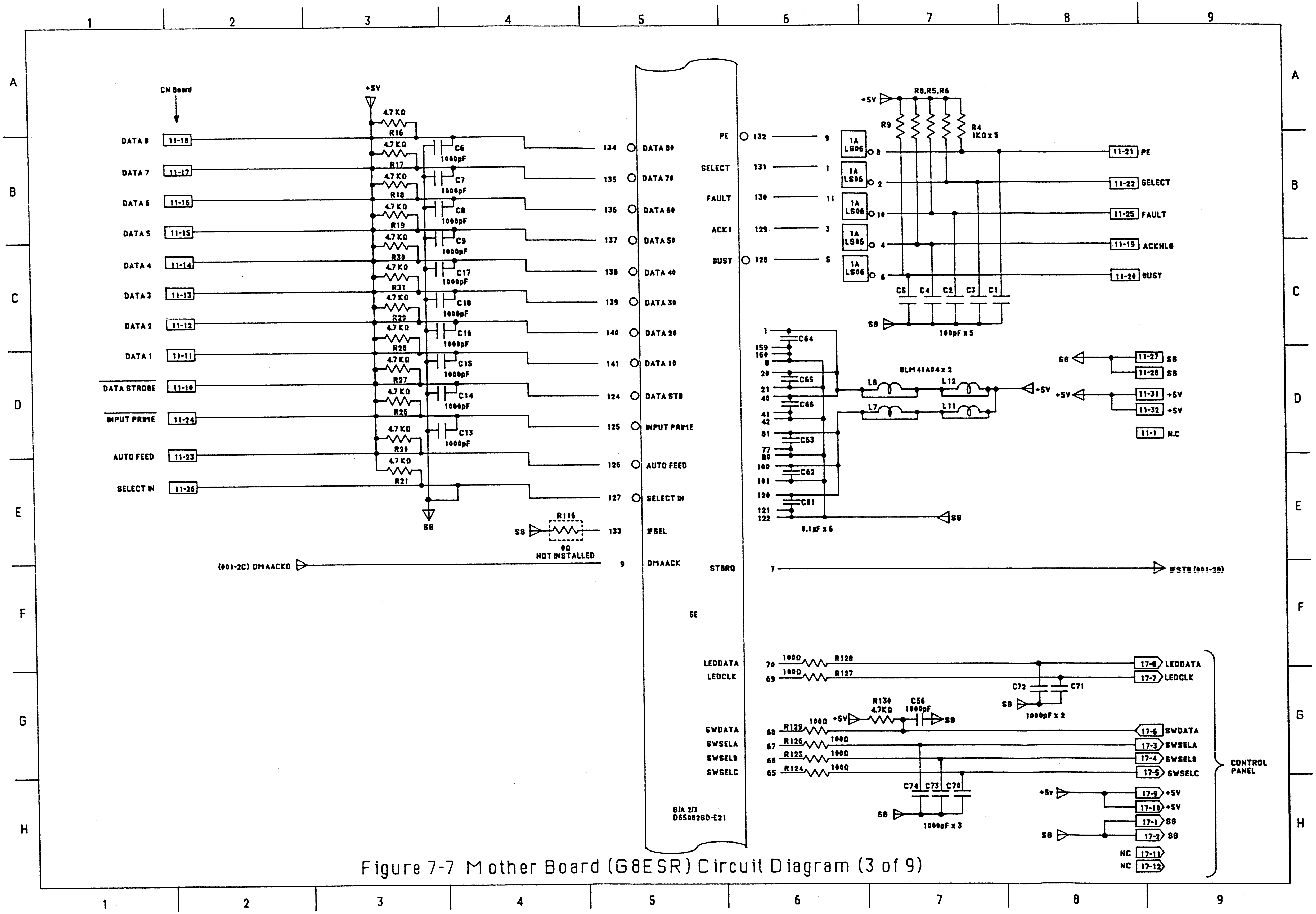

CN Board
+5V
4.7KΩ
R16
R17
R18
R19
R30
R31
R29
R28
R27
R26
R20
R21
C6
C7
C8
C9
C17
C18
C16
C15
C14
C13
1000pF
DATA 8
DATA 7
DATA 6
DATA 5
DATA 4
DATA 3
DATA 2
DATA 1
DATA STROBE
INPUT PRIME
AUTO FEED
SELECT IN
11-18
11-17
11-16
11-15
11-14
11-13
11-12
11-11
11-10
11-24
11-23
11-26
SG
R116
0Ω
NOT INSTALLED
(001-2C) DMAACKO
134 DATA 80
135 DATA 70
136 DATA 60
137 DATA 50
138 DATA 40
139 DATA 30
140 DATA 20
141 DATA 10
124 DATA STB
125 INPUT PRIME
126 AUTO FEED
127 SELECT IN
133 IFSEL
9 DMAACK
PE 132
SELECT 131
FAULT 130
ACK1 129
BUSY 128
STBRQ 7
SE
LEDDATA 70
LEDCLK 69
SWDATA 68
SWSELA 67
SWSELB 66
SWSELC 65
8/A 2/3
D6S0828D-E21
R8,R5,R6
R9
R4
1KΩ x 5
1A LS06
11-21 PE
11-22 SELECT
11-25 FAULT
11-19 ACKNLG
11-20 BUSY
C5 C4 C2 C3 C1
100pF x 5
C64
C65
C66
C63
C62
C61
0.1μF x 6
BLM41A04 x 2
L8
L12
L7
L11
11-27 SG
11-28 SG
11-31 +5V
11-32 +5V
11-1 N.C
IFSTB (001-2B)
100Ω
R128
R127
C72
C71
1000pF x 2
R130
4.7KΩ
C56
1000pF
R129
R126
R125
R124
C74 C73 C70
1000pF x 3
17-8 LEDDATA
17-7 LEDCLK
17-6 SWDATA
17-3 SWSELA
17-4 SWSELB
17-5 SWSELC
17-9 +5V
17-10 +5V
17-1 SG
17-2 SG
NC 17-11
NC 17-12
CONTROL PANEL
1 2 3 4 5 6 7 8 9
A B C D E F G H

Figure 7-7 Mother Board (G8ESR) Circuit Diagram (3 of 9)

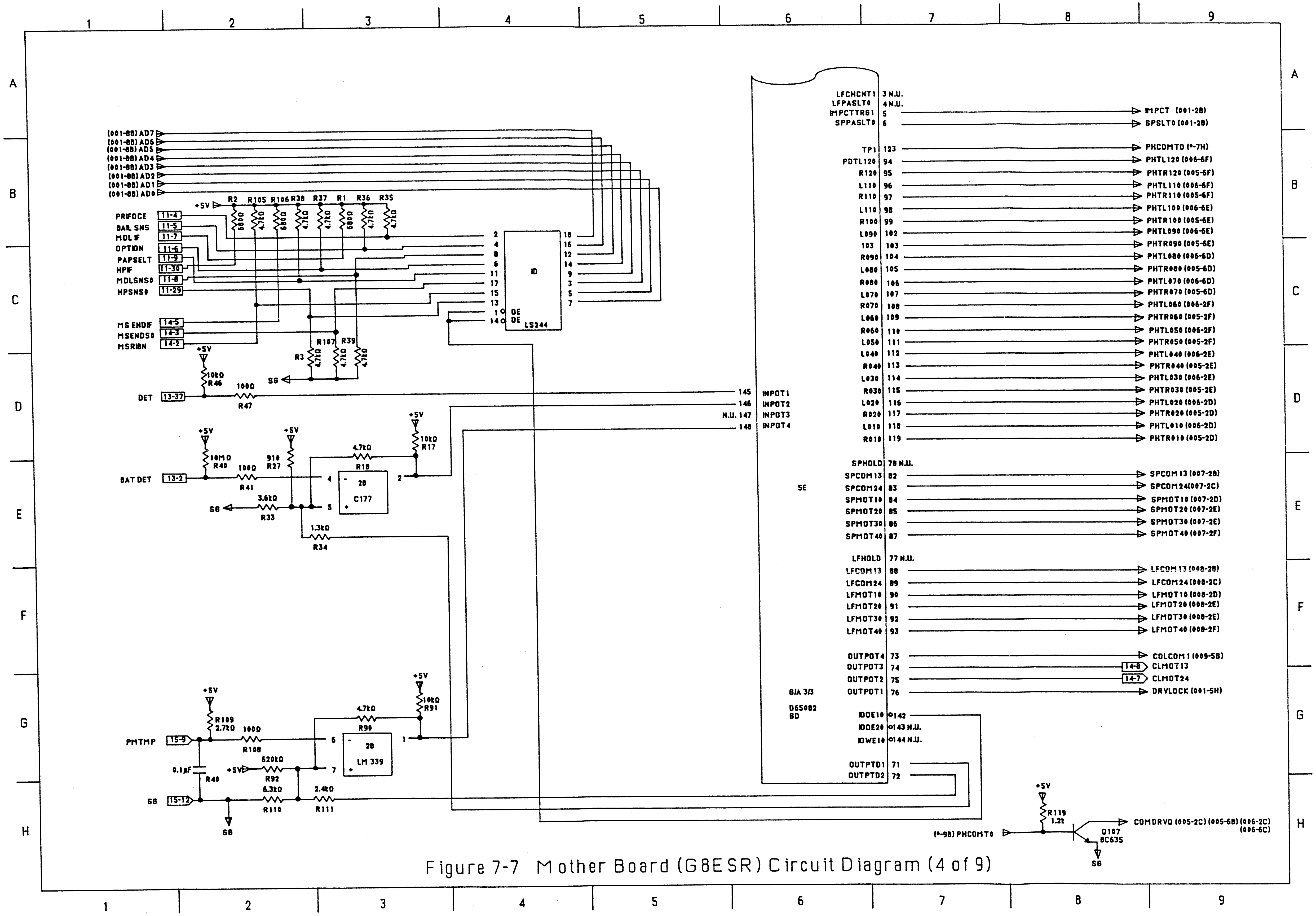

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
(001-8B) AD7
(001-8B) AD6
(001-8B) AD5
(001-8B) AD4
(001-8B) AD3
(001-8B) AD2
(001-8B) AD1
(001-8B) AD0
+5V
R2
R105
R106
R38
R37
R1
R36
R35
680Ω
4.7kΩ
PRIFOCE
11-4
BAIL SNS
11-5
MDL IF
11-7
OPTION
11-6
PAPSELT
11-9
HPIF
11-30
MDLSNS0
11-8
HPSNS0
11-29
MS ENDIF
14-5
MSENDS0
14-3
MSRIBN
14-2
1D
OE
LS244
R3
R107
R39
S8
10kΩ
R46
100Ω
R47
DET
13-37
10MΩ
R40
R41
910
R27
R18
10kΩ
R17
BAT DET
13-2
3.6kΩ
R33
1.3kΩ
R34
2B
C177
R109
2.7kΩ
R108
620kΩ
R92
R90
R91
LM 339
PMTMP
15-9
0.1μF
R40
6.3kΩ
R110
2.4kΩ
R111
15-12
145 INPOT1
146 INPOT2
N.U. 147 INPOT3
148 INPOT4
5E
8/A 3/3
D65082
6D
LFCHCNT1 3 N.U.
LFPASLT0 4 N.U.
IMPCTTRG1 5
SPPASLT0 6
IMPCT (001-2B)
SPSLT0 (001-2B)
TP1 123
PDTL120 94
R120 95
L110 96
R110 97
L110 98
R100 99
L090 102
103 103
R090 104
L080 105
R080 106
L070 107
R070 108
L060 109
R060 110
L050 111
L040 112
R040 113
L030 114
R030 115
L020 116
R020 117
L010 118
R010 119
PHCOMTO (*-7H)
PHTL120 (006-6F)
PHTR120 (005-6F)
PHTL110 (006-6F)
PHTR110 (005-6F)
PHTL100 (006-6E)
PHTR100 (005-6E)
PHTL090 (006-6E)
PHTR090 (005-6E)
PHTL080 (006-6D)
PHTR080 (005-6D)
PHTL070 (006-6D)
PHTR070 (005-6D)
PHTL060 (006-2F)
PHTR060 (005-2F)
PHTL050 (006-2F)
PHTR050 (005-2F)
PHTL040 (006-2E)
PHTR040 (005-2E)
PHTL030 (006-2E)
PHTR030 (005-2E)
PHTL020 (006-2D)
PHTR020 (005-2D)
PHTL010 (006-2D)
PHTR010 (005-2D)
SPHOLD 78 N.U.
SPCOM13 82
SPCOM24 83
SPMOT10 84
SPMOT20 85
SPMOT30 86
SPMOT40 87
SPCOM13 (007-2B)
SPCOM24 (007-2C)
SPMOT10 (007-2D)
SPMOT20 (007-2E)
SPMOT30 (007-2E)
SPMOT40 (007-2F)
LFHOLD 77 N.U.
LFCOM13 88
LFCOM24 89
LFMOT10 90
LFMOT20 91
LFMOT30 92
LFMOT40 93
LFCOM13 (008-2B)
LFCOM24 (008-2C)
LFMOT10 (008-2D)
LFMOT20 (008-2E)
LFMOT30 (008-2E)
LFMOT40 (008-2F)
OUTPOT4 73
OUTPOT3 74
OUTPOT2 75
OUTPOT1 76
COLCOM1 (009-5B)
14-8 CLMOT13
14-7 CLMOT24
DRVLOCK (001-5H)
IOOE10 142
IOOE20 143 N.U.
IOWE10 144 N.U.
OUTPTD1 71
OUTPTD2 72
R119
1.2k
(*-9B) PHCOMT0
Q107
BC635
COMDRVQ (005-2C) (005-6B) (006-2C) (006-6C)

Figure 7-7 Mother Board (G8ESR) Circuit Diagram (4 of 9)

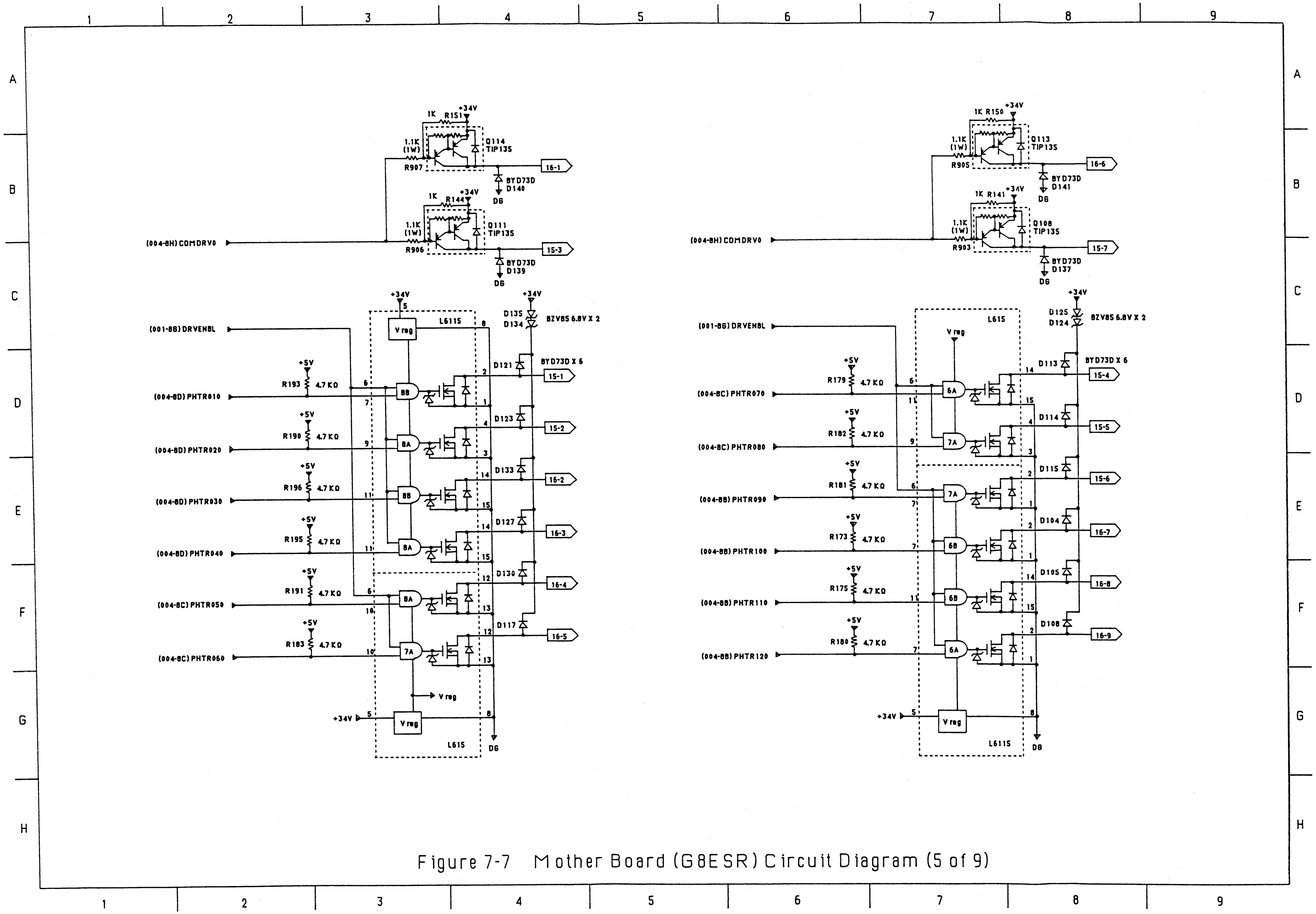

1K
R151
+34V
1.1K
(1W)
R907
Q114
TIP135
16-1
BYD73D
D140
D6
1K
R144
+34V
1.1K
(1W)
R906
Q111
TIP135
15-3
BYD73D
D139
D6
(004-8H) COMDRV0
+34V
5
Vreg
L6115
8
+34V
D135
D134
BZV85 6.8V X 2
(001-8B) DRVENBL
BYD73D X 6
D121
2
15-1
+5V
R193
4.7 KΩ
6
8B
(004-8D) PHTR010
7
1
D123
4
15-2
+5V
R190
4.7 KΩ
8A
(004-8D) PHTR020
9
3
D133
14
16-2
+5V
R196
4.7 KΩ
8B
(004-8D) PHTR030
11
15
D127
14
16-3
+5V
R195
4.7 KΩ
8A
(004-8D) PHTR040
11
15
D130
12
16-4
+5V
R191
4.7 KΩ
6
8A
(004-8C) PHTR050
10
13
D117
12
16-5
+5V
R183
4.7 KΩ
7A
(004-8C) PHTR060
10
13
Vreg
+34V
5
Vreg
8
L615
D6
1K R150
+34V
1.1K
(1W)
R905
Q113
TIP135
16-6
BYD73D
D141
D6
1K R141
+34V
1.1K
(1W)
R903
Q108
TIP135
15-7
BYD73D
D137
D6
(004-8H) COMDRV0
+34V
D125
D124
BZV85 6.8V X 2
L615
(001-8G) DRVENBL
Vreg
BYD73D X 6
D113
14
15-4
+5V
R179
4.7 KΩ
6
6A
(004-8C) PHTR070
11
15
D114
4
15-5
+5V
R182
4.7 KΩ
7A
(004-8C) PHTR080
9
3
D115
2
15-6
+5V
R181
4.7 KΩ
6
7A
(004-8B) PHTR090
7
1
D104
2
16-7
+5V
R173
4.7 KΩ
6B
(004-8B) PHTR100
7
1
D105
14
16-8
+5V
R175
4.7 KΩ
6B
(004-8B) PHTR110
11
15
D108
2
16-9
+5V
R180
4.7 KΩ
6A
(004-8B) PHTR120
7
1
+34V
5
Vreg
8
L6115
D8
1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H

Figure 7-7 Mother Board (G8ESR) Circuit Diagram (5 of 9)

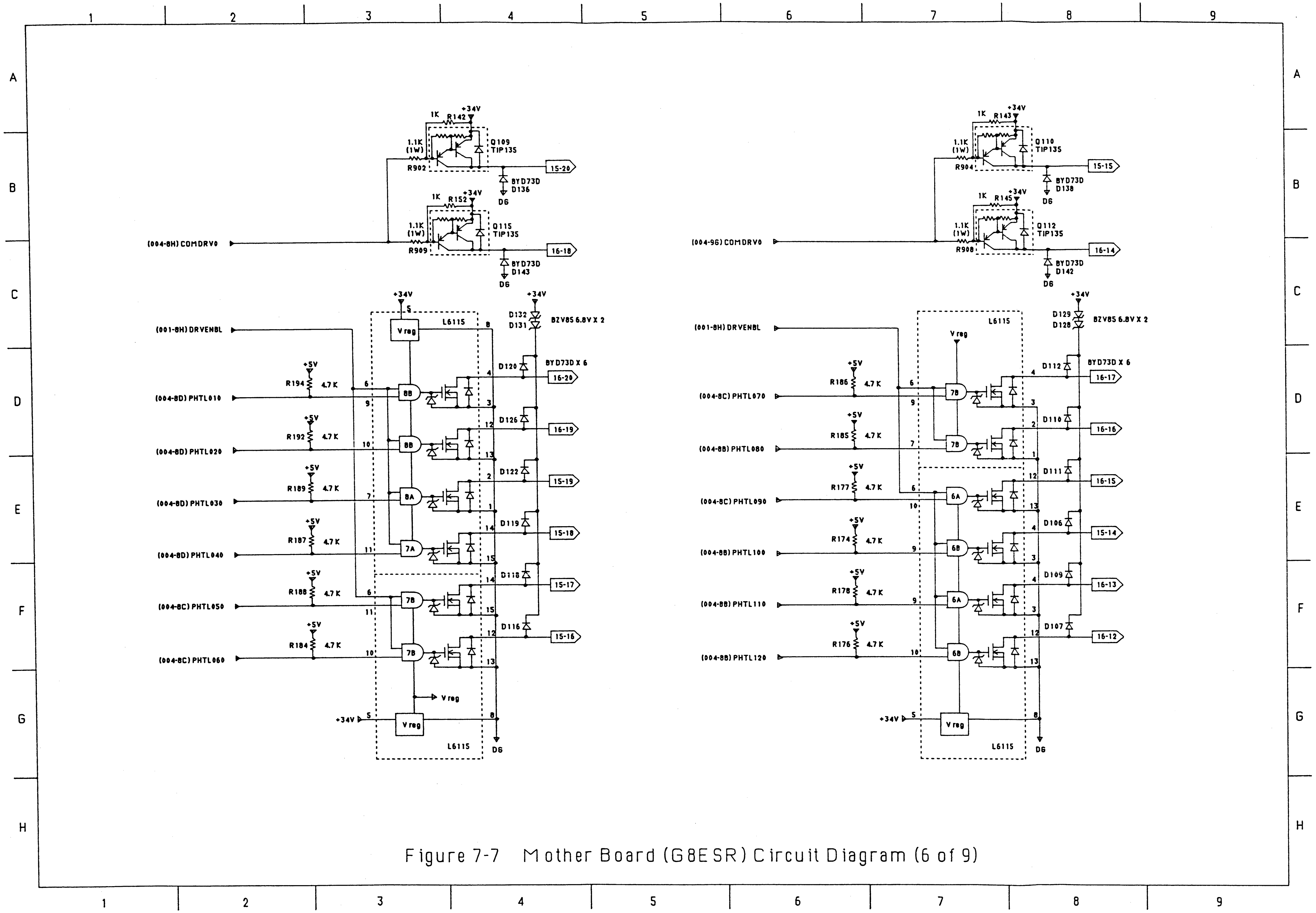

(004-8H) COMDRV0
(004-96) COMDRV0
(001-8H) DRVENBL
(004-8D) PHTL010
(004-8D) PHTL020
(004-8D) PHTL030
(004-8D) PHTL040
(004-8C) PHTL050
(004-8C) PHTL060
(004-8C) PHTL070
(004-8B) PHTL080
(004-8C) PHTL090
(004-8B) PHTL100
(004-8B) PHTL110
(004-8B) PHTL120
R142
R143
R152
R145
R902
R904
R909
R908
1K
1.1K (1W)
+34V
+5V
Q109 TIP135
Q115 TIP135
Q110 TIP135
Q112 TIP135
BYD73D
D136
D143
D138
D142
D6
15-20
16-18
15-15
16-14
D132
D131
D129
D128
BZV85 6.8V X 2
BYD73D X 6
L6115
Vreg
R194
R192
R189
R187
R188
R184
R186
R185
R177
R174
R178
R176
4.7K
8B
8A
7A
7B
6A
6B
D120
D126
D122
D119
D118
D116
D112
D110
D111
D106
D109
D107
16-20
16-19
15-19
15-18
15-17
15-16
16-17
16-16
16-15
15-14
16-13
16-12
A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8
9

Figure 7-7 Mother Board (G8ESR) Circuit Diagram (6 of 9)

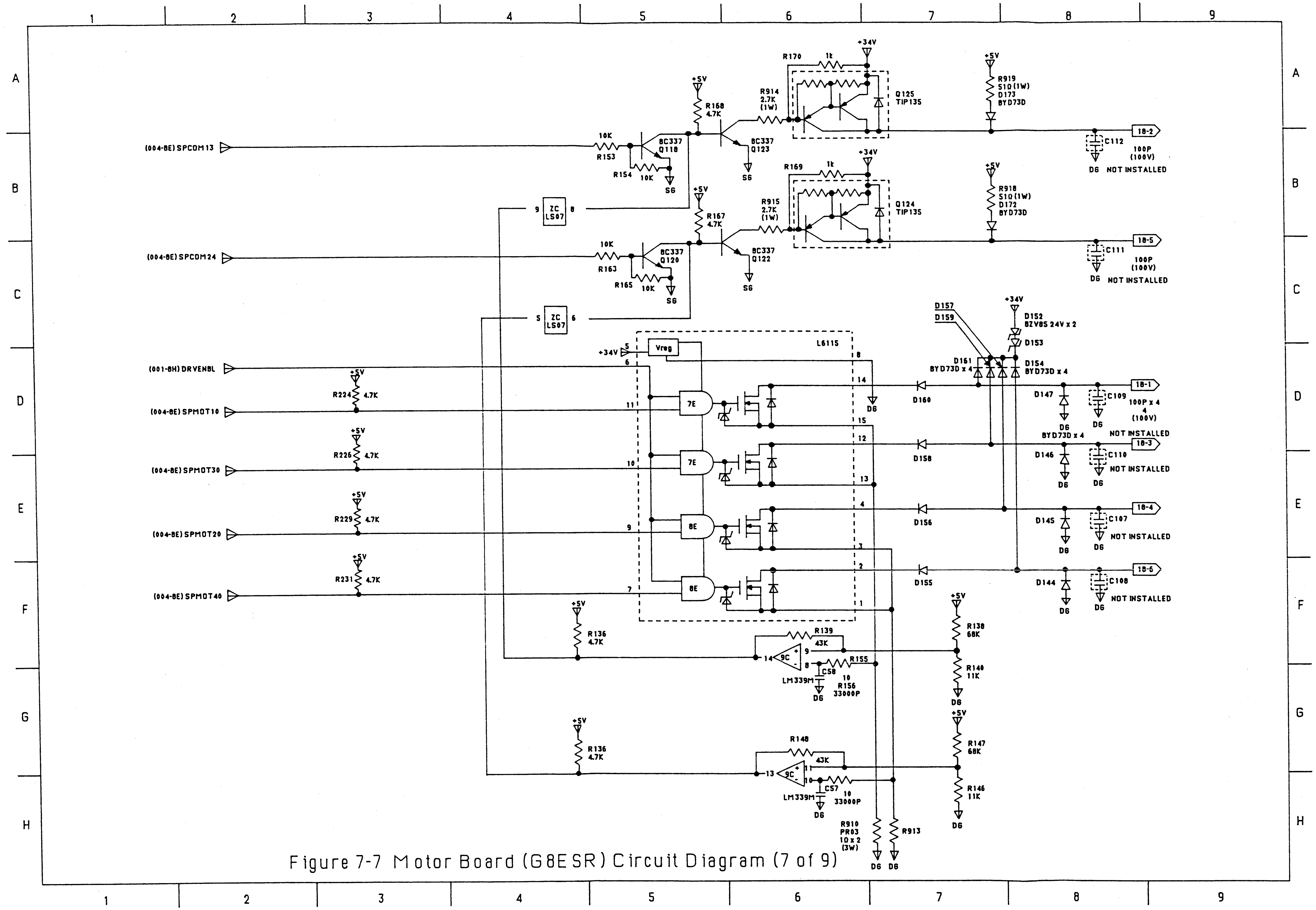

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
(004-8E) SPCOM13
(004-8E) SPCOM24
(001-8H) DRVENBL
(004-8E) SPMOT10
(004-8E) SPMOT30
(004-8E) SPMOT20
(004-8E) SPMOT40
+5V
+34V
10K
R153
R154
10K
BC337
Q118
S6
R168
4.7K
BC337
Q123
R914
2.7K
(1W)
R170
1k
Q125
TIP135
R919
510 (1W)
D173
BYD73D
C112
100P
(100V)
D6
NOT INSTALLED
18-2
R169
1k
R915
2.7K
(1W)
Q124
TIP135
R918
510 (1W)
D172
BYD73D
18-5
C111
R167
4.7K
BC337
Q122
R163
R165
BC337
Q120
ZC
LS07
9
8
5
6
L6115
Vreg
D157
D159
D152
BZV85 24V x 2
D153
D161
BYD73D x 4
D154
BYD73D x 4
R224
4.7K
R226
R229
R231
7E
8E
11
10
7
14
15
12
13
4
3
2
1
D160
D158
D156
D155
D147
D146
D145
D144
BYD73D x 4
C109
100P x 4
(100V)
C110
C107
C108
18-1
18-3
18-4
18-6
R136
4.7K
R139
43K
9C
LM339M
R155
C58
10
R156
33000P
R138
68K
R140
11K
R148
43K
C57
R147
68K
R146
11K
R910
PR03
10 x 2
(3W)
R913

Figure 7-7 Motor Board (G8ESR) Circuit Diagram (7 of 9)

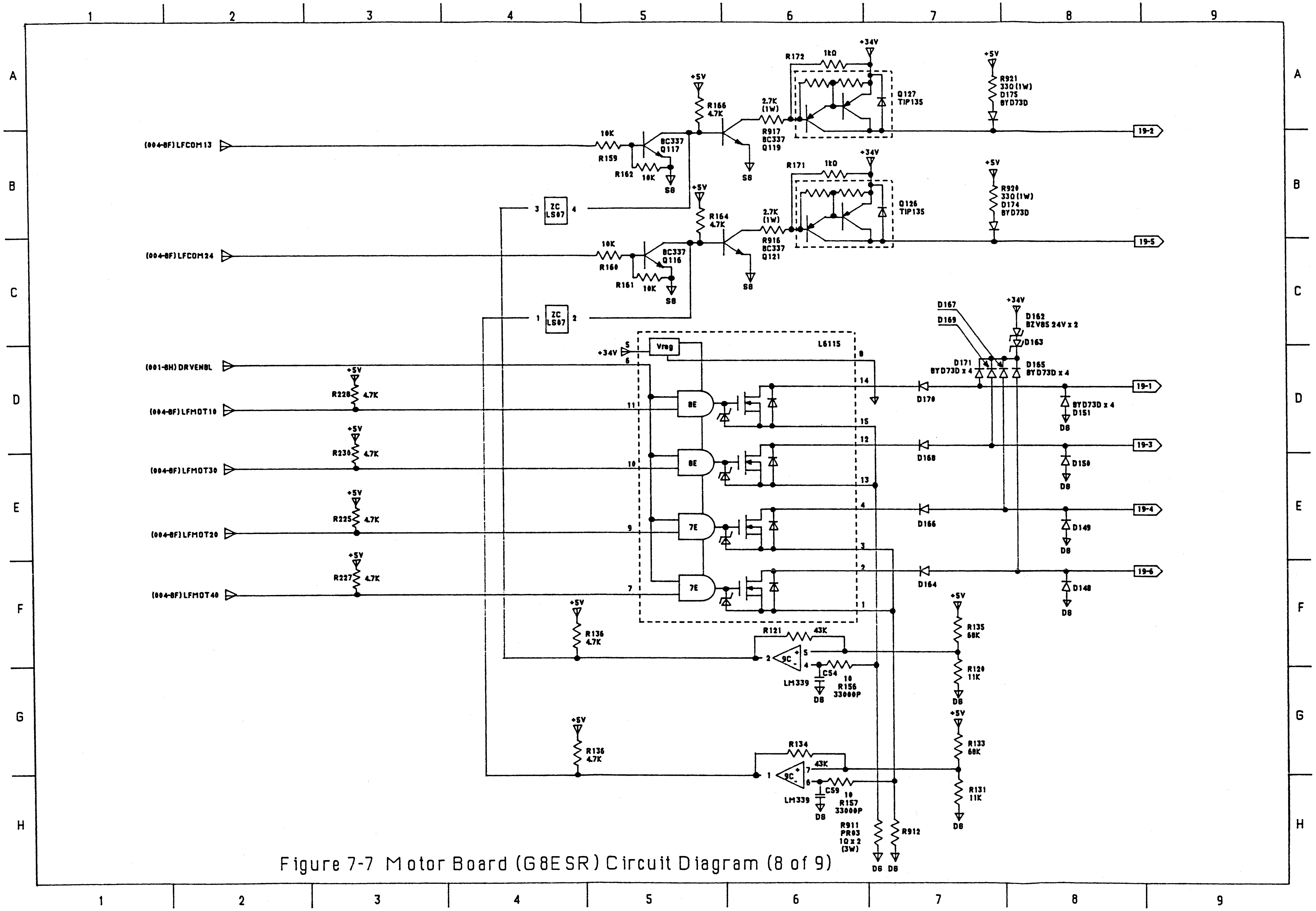

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
(004-8F) LFCOM13
(004-8F) LFCOM24
(001-8H) DRVENBL
(004-8F) LFMOT10
(004-8F) LFMOT30
(004-8F) LFMOT20
(004-8F) LFMOT40
+5V
R228 4.7K
R230 4.7K
R225 4.7K
R227 4.7K
10K
R159
BC337
Q117
R162 10K
S8
+5V
R166
4.7K
2.7K
(1W)
R917
BC337
Q119
S8
R172 1kΩ
+34V
Q127
TIP135
+5V
R921
33Ω (1W)
D175
BYD73D
19-2
3 ZC LS07 4
10K
R160
BC337
Q116
R161 10K
S8
+5V
R164
4.7K
2.7K
(1W)
R916
BC337
Q121
S8
R171 1kΩ
+34V
Q126
TIP135
+5V
R920
33Ω (1W)
D174
BYD73D
19-5
1 ZC LS07 2
+34V
5
6
Vreg
L6115
8
14
15
12
13
4
3
2
1
11
10
9
7
8E
8E
7E
7E
D167
D169
+34V
D162
BZV85 24V x 2
D163
D171
BYD73D x 4
D165
BYD73D x 4
D170
D168
D166
D164
19-1
19-3
19-4
19-6
BYD73D x 4
D151
D150
D149
D148
D8
+5V
R136
4.7K
R121 43K
2
9C
5
4
C54
LM339
D8
10
R156
33000P
+5V
R135
68K
R120
11K
D8
+5V
R136
4.7K
R134
43K
1
9C
7
6
C59
LM339
D8
10
R157
33000P
+5V
R133
68K
R131
11K
D8
R911
PR03
1Ω x 2
(3W)
R912
D6 D8

Figure 7-7 Motor Board (G8ESR) Circuit Diagram (8 of 9)

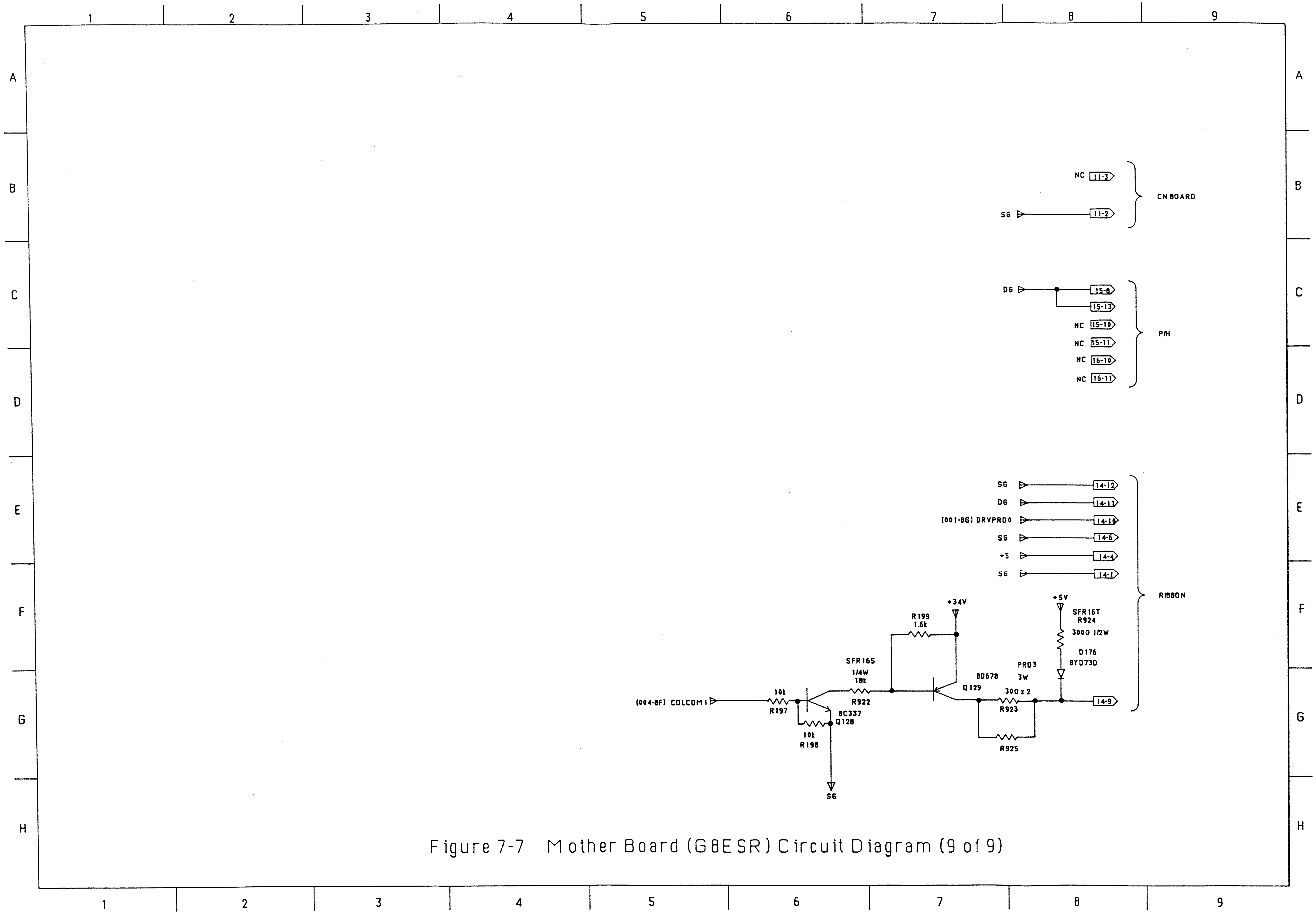

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
NC
11-3
SG
11-2
CN BOARD
DG
15-8
15-13
NC
15-10
NC
15-11
NC
16-10
NC
16-11
P/H
SG
14-12
DG
14-11
(001-8G) DRVPRO0
14-10
SG
14-6
+5
14-4
SG
14-1
RIBBON
+34V
R199
1.6k
SFR16S
1/4W
18k
R922
10k
R197
(004-8F) COLCOM1
BC337
Q128
10k
R198
SG
BD678
Q129
PR03
3W
300Ω x 2
R923
R925
+5V
SFR16T
R924
300Ω 1/2W
D176
BYD73D
14-9

Figure 7-7 Mother Board (G8ESR) Circuit Diagram (9 of 9)

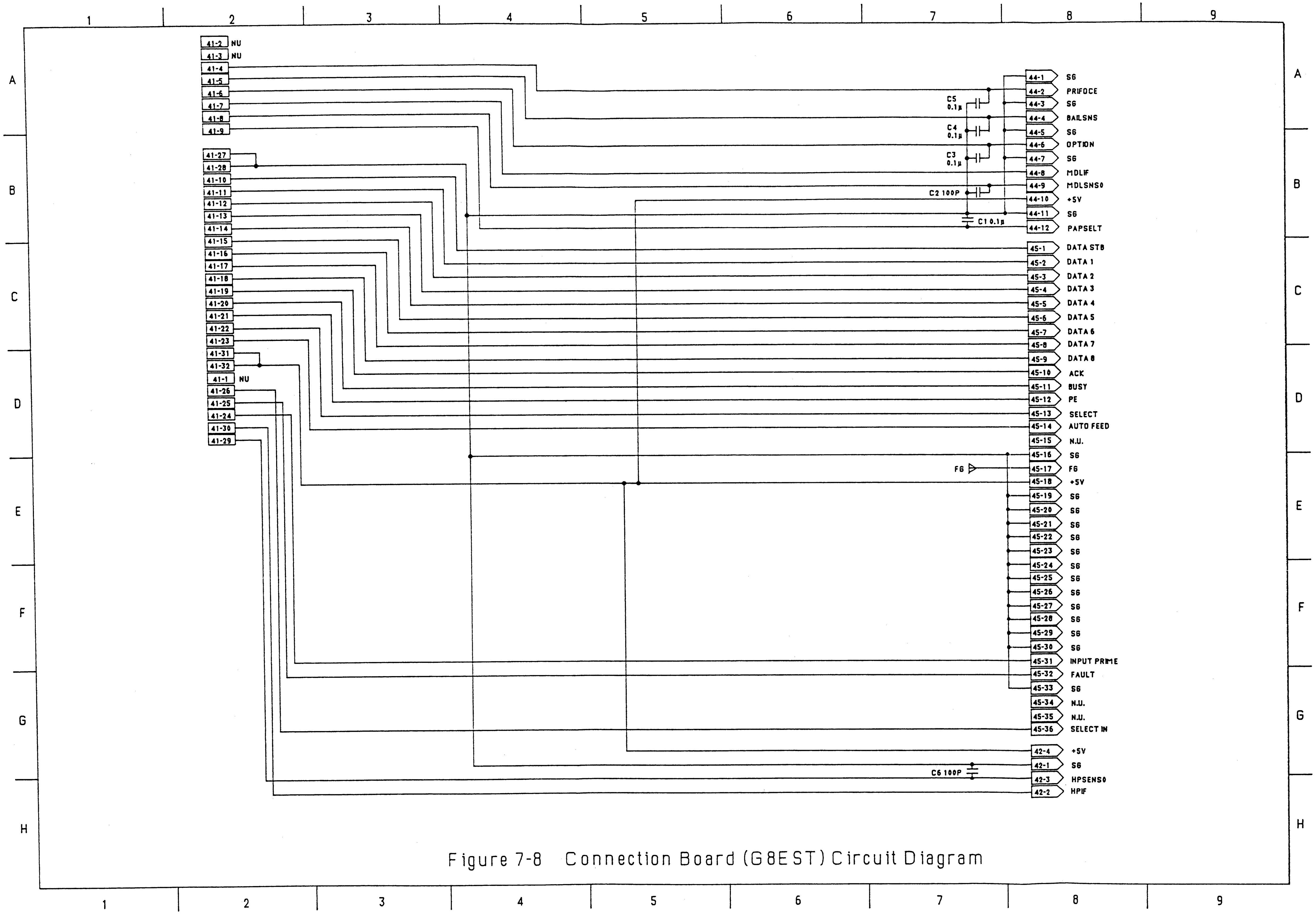

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
41-2 NU
41-3 NU
41-4
41-5
41-6
41-7
41-8
41-9
41-27
41-28
41-10
41-11
41-12
41-13
41-14
41-15
41-16
41-17
41-18
41-19
41-20
41-21
41-22
41-23
41-31
41-32
41-1 NU
41-26
41-25
41-24
41-30
41-29
C5 0.1μ
C4 0.1μ
C3 0.1μ
C2 100P
C1 0.1μ
F6
C6 100P
44-1 SG
44-2 PRFOCE
44-3 SG
44-4 BAILSNS
44-5 SG
44-6 OPTION
44-7 SG
44-8 MDLIF
44-9 MDLSNS0
44-10 +5V
44-11 SG
44-12 PAPSELT
45-1 DATA STB
45-2 DATA 1
45-3 DATA 2
45-4 DATA 3
45-5 DATA 4
45-6 DATA 5
45-7 DATA 6
45-8 DATA 7
45-9 DATA 8
45-10 ACK
45-11 BUSY
45-12 PE
45-13 SELECT
45-14 AUTO FEED
45-15 N.U.
45-16 SG
45-17 FG
45-18 +5V
45-19 SG
45-20 SG
45-21 SG
45-22 SG
45-23 SG
45-24 SG
45-25 SG
45-26 SG
45-27 SG
45-28 SG
45-29 SG
45-30 SG
45-31 INPUT PRIME
45-32 FAULT
45-33 SG
45-34 N.U.
45-35 N.U.
45-36 SELECT IN
42-4 +5V
42-1 SG
42-3 HPSENS0
42-2 HPIF

Figure 7-8 Connection Board (G8EST) Circuit Diagram

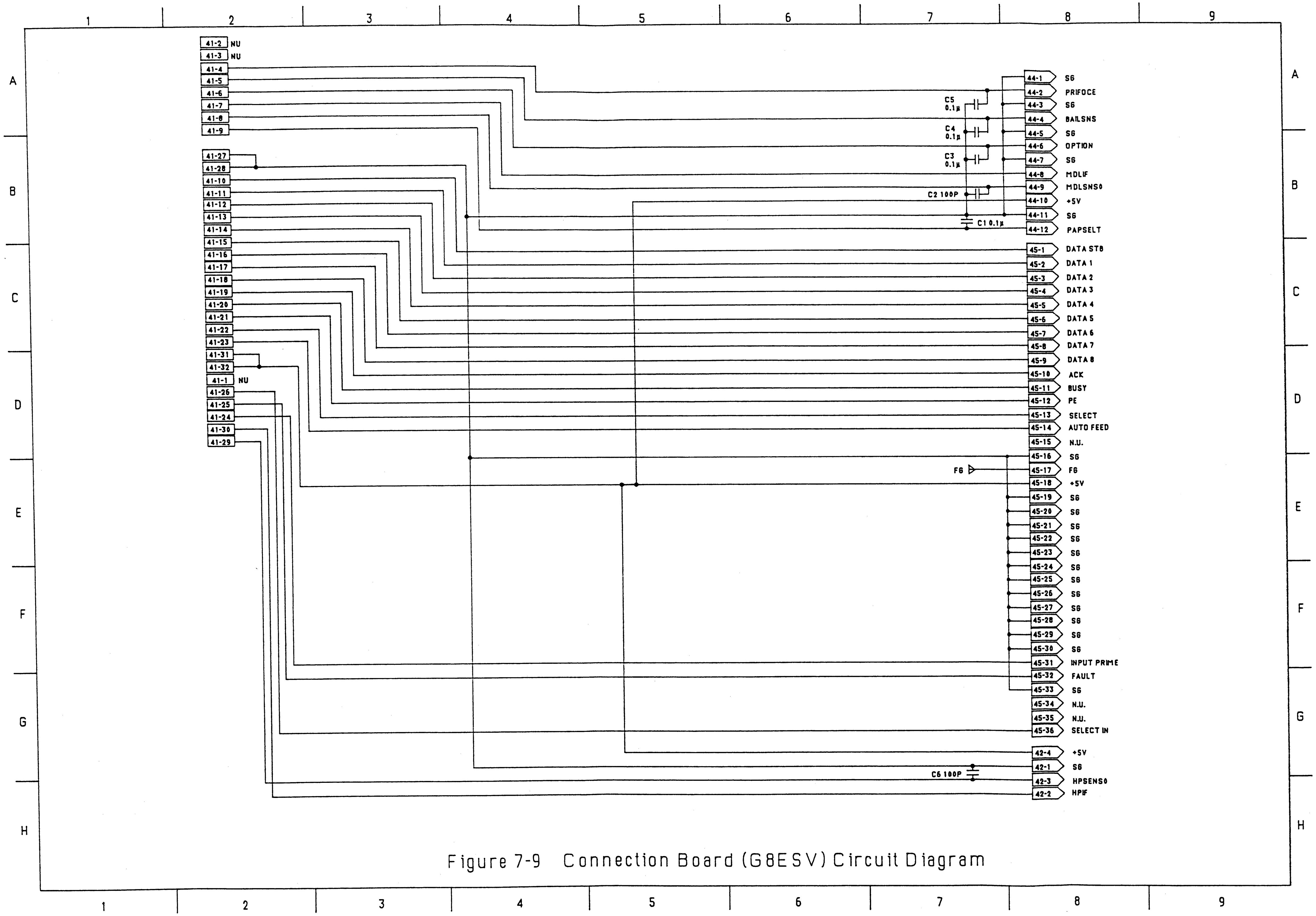

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
41-2 NU
41-3 NU
41-4
41-5
41-6
41-7
41-8
41-9
41-27
41-28
41-10
41-11
41-12
41-13
41-14
41-15
41-16
41-17
41-18
41-19
41-20
41-21
41-22
41-23
41-31
41-32
41-1 NU
41-26
41-25
41-24
41-30
41-29
C5 0.1μ
C4 0.1μ
C3 0.1μ
C2 100P
C1 0.1μ
C6 100P
FG
44-1 SG
44-2 PRIFOCE
44-3 SG
44-4 BAILSNS
44-5 SG
44-6 OPTION
44-7 SG
44-8 MDLIF
44-9 MDLSNS0
44-10 +5V
44-11 SG
44-12 PAPSELT
45-1 DATA STB
45-2 DATA 1
45-3 DATA 2
45-4 DATA 3
45-5 DATA 4
45-6 DATA 5
45-7 DATA 6
45-8 DATA 7
45-9 DATA 8
45-10 ACK
45-11 BUSY
45-12 PE
45-13 SELECT
45-14 AUTO FEED
45-15 N.U.
45-16 SG
45-17 FG
45-18 +5V
45-19 SG
45-20 SG
45-21 SG
45-22 SG
45-23 SG
45-24 SG
45-25 SG
45-26 SG
45-27 SG
45-28 SG
45-29 SG
45-30 SG
45-31 INPUT PRIME
45-32 FAULT
45-33 SG
45-34 N.U.
45-35 N.U.
45-36 SELECT IN
42-4 +5V
42-1 SG
42-3 HPSENS0
42-2 HPIF

Figure 7-9 Connection Board (G8ESV) Circuit Diagram

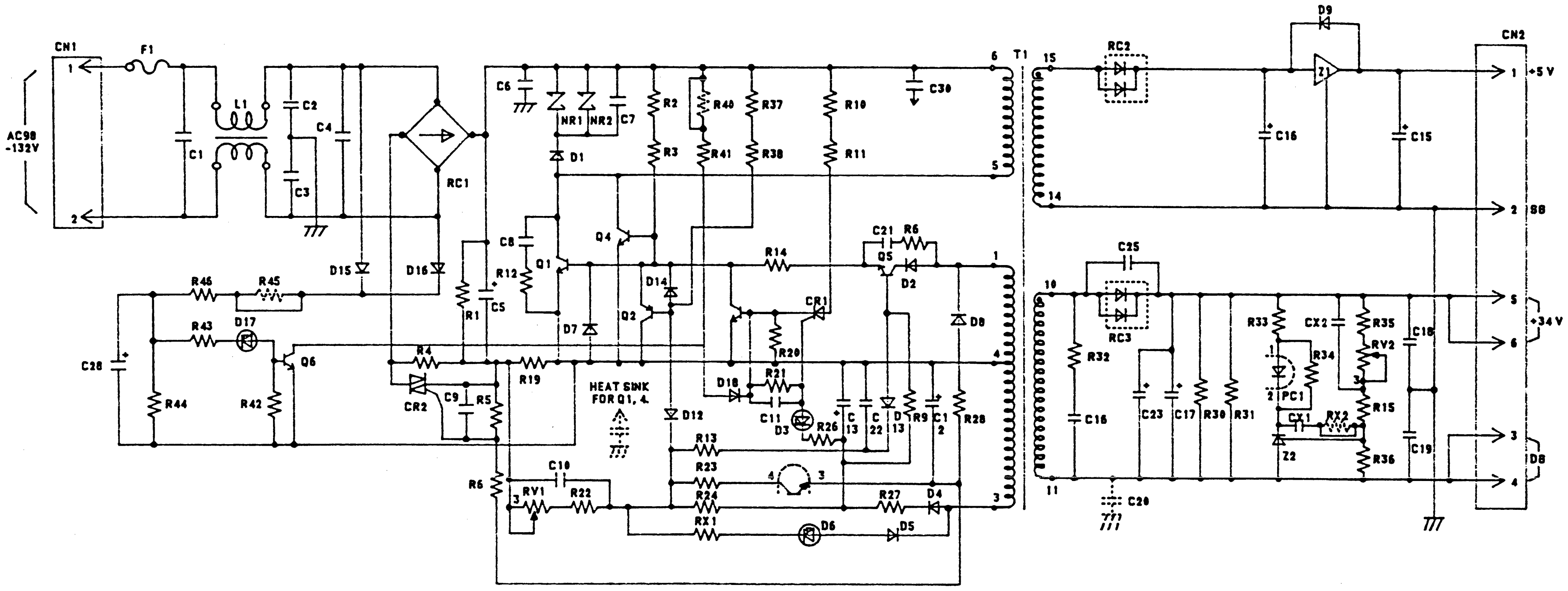

CN1
F1
L1
C1
C2
C3
C4
AC90
-132V
RC1
C6
NR1
NR2
C7
R2
R3
R40
R41
R37
R38
R10
R11
C30
D1
T1
RC2
D9
Z1
C16
C15
CN2
+5 V
SG
+34 V
DS
Q4
Q1
Q2
C8
R12
R1
C5
D14
D7
R14
C21
R6
Q5
D2
CR1
D8
R20
R21
D18
C11
D3
R26
C13
C22
D13
R9
C12
R28
D15
D16
R46
R45
R43
D17
Q6
C28
R44
R42
R4
R19
CR2
C9
R5
HEAT SINK
FOR Q1, 4.
D12
R13
R23
R24
RX1
R27
D4
D5
D6
R6
RV1
C10
R22
C25
RC3
R32
C16
C23
C17
R30
R31
R33
CX2
R35
RV2
R34
PC1
C18
R15
CX1
RX2
Z2
R36
C19
C20
15
14
10
11
1
2
3
4
5
6

Figure 7-10 PSD POWER (B) (808-891104-002-A)

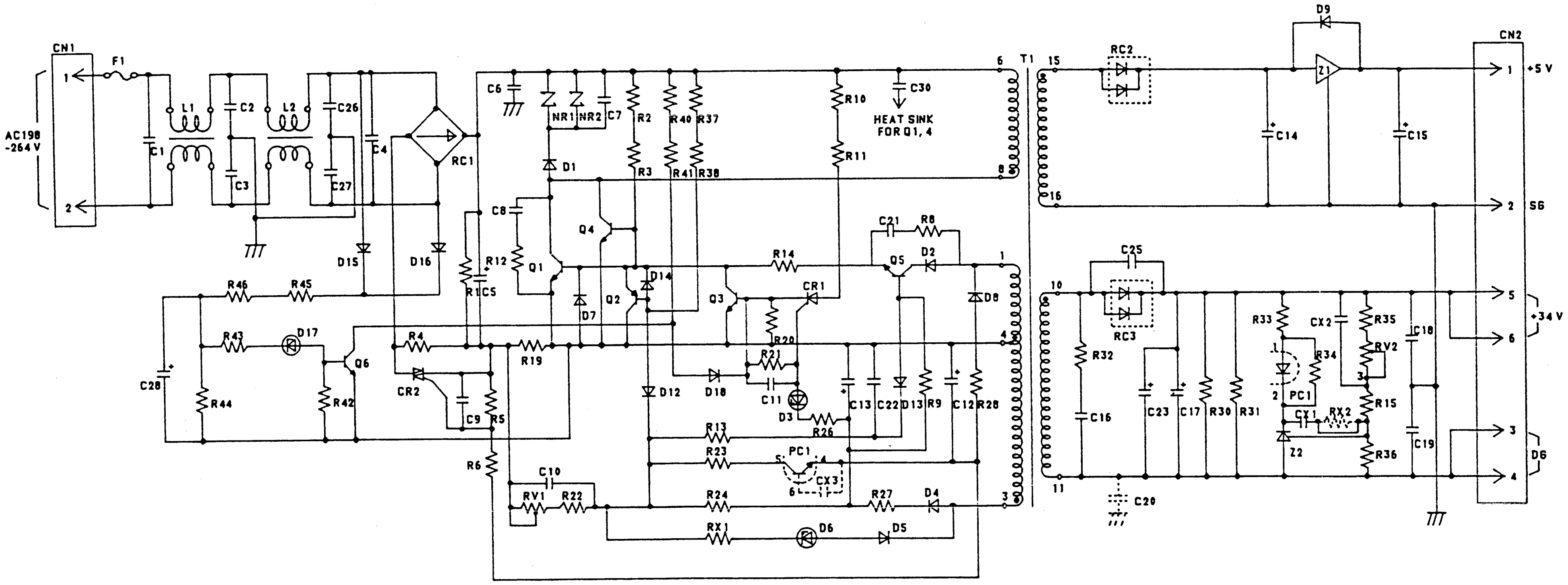

CN1
F1
AC198 -264 V
1
2
L1
L2
C1
C2
C3
C26
C27
C4
RC1
C6
NR1
NR2
C7
R2
R3
R40
R41
R37
R38
R10
R11
C30
HEAT SINK FOR Q1, 4
D1
C8
Q4
R12
Q1
R1
C5
D15
D16
R46
R45
R43
D17
Q6
R44
R42
C28
R4
CR2
C9
R5
R19
D7
Q2
D14
D12
D18
Q3
R20
R21
C11
D3
CR1
R14
C21
R8
Q5
D2
D8
C13
C22
D13
R9
C12
R28
R26
R13
R23
PC1
CX3
R6
C10
RV1
R22
R24
R27
D4
RX1
D6
D5
T1
RC2
D9
Z1
C14
C15
CN2
+5 V
S6
C25
RC3
R32
C16
C20
C23
C17
R30
R31
R33
CX2
R35
RV2
C18
R34
PC1
R15
CX1
RX2
Z2
R36
C19
+34 V
D6

Figure 7-11 PSD POWER (C) (808-891104-003-A)

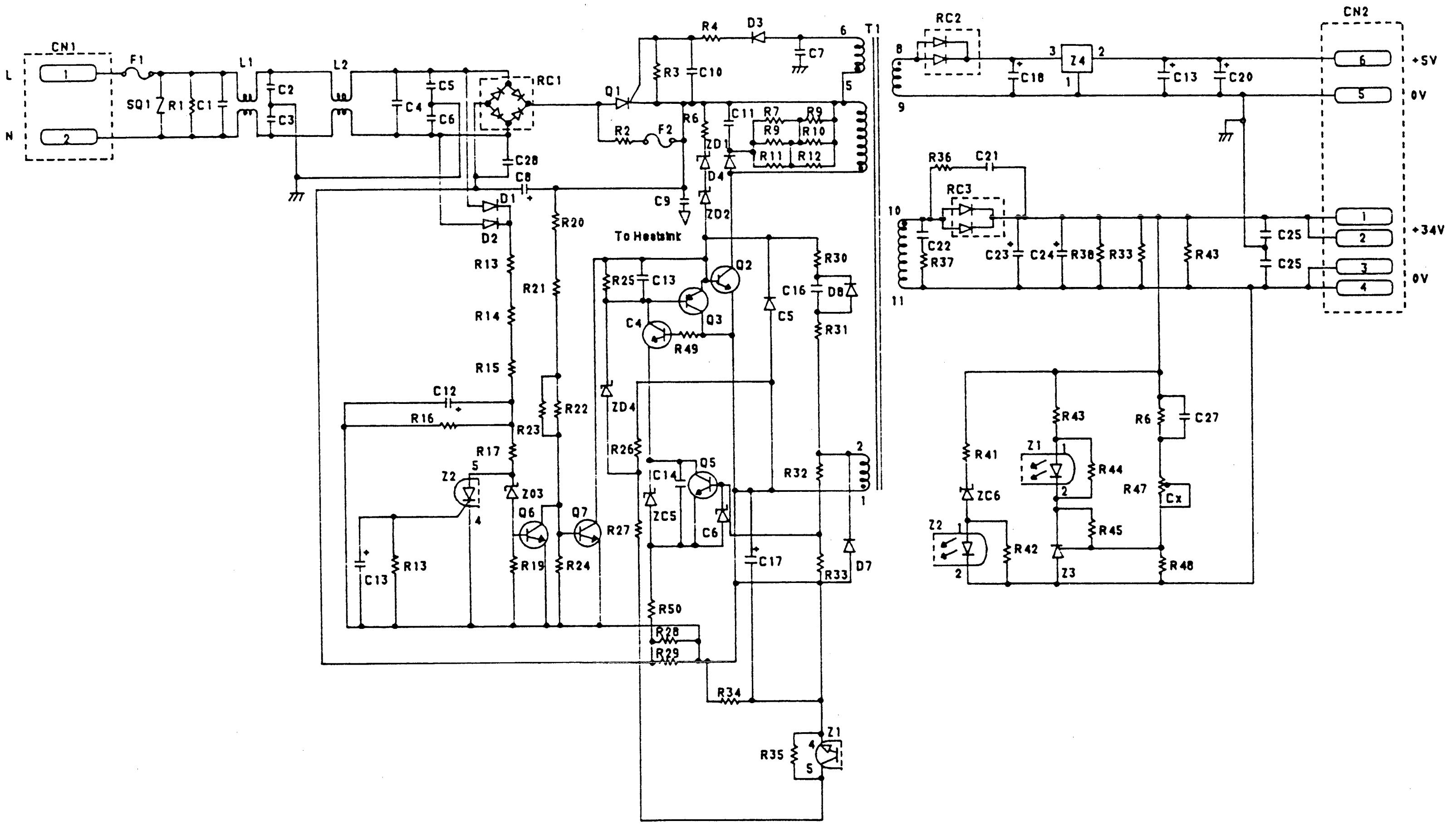

CN1
L
N
F1
SQ1
R1
C1
L1
C2
C3
L2
C4
C5
C6
RC1
C28
C8
D1
D2
R13
R14
R15
R20
R21
R22
R23
C12
R16
R17
Z2
ZD3
Q6
Q7
R19
R24
R27
C13
R4
D3
C7
T1
Q1
R3
C10
R2
F2
R6
C11
R7
R8
R9
R10
R11
R12
ZD1
D4
C9
ZD2
To Heatsink
R25
Q2
Q3
C4
R49
ZD4
R26
C14
Q5
ZC5
C6
R30
C16
D8
C5
R31
R32
C17
R33
D7
R50
R28
R29
R34
Z1
R35
RC2
C18
Z4
C13
C20
CN2
+5V
0V
R36
C21
RC3
C22
R37
C23
C24
R38
R33
R43
C25
+34V
0V
R41
ZC6
Z1
R43
R44
R6
C27
R47
Cx
Z2
R42
R45
Z3
R48

Figure 7-12 PSD POWER (C) (808-891104-303-A)

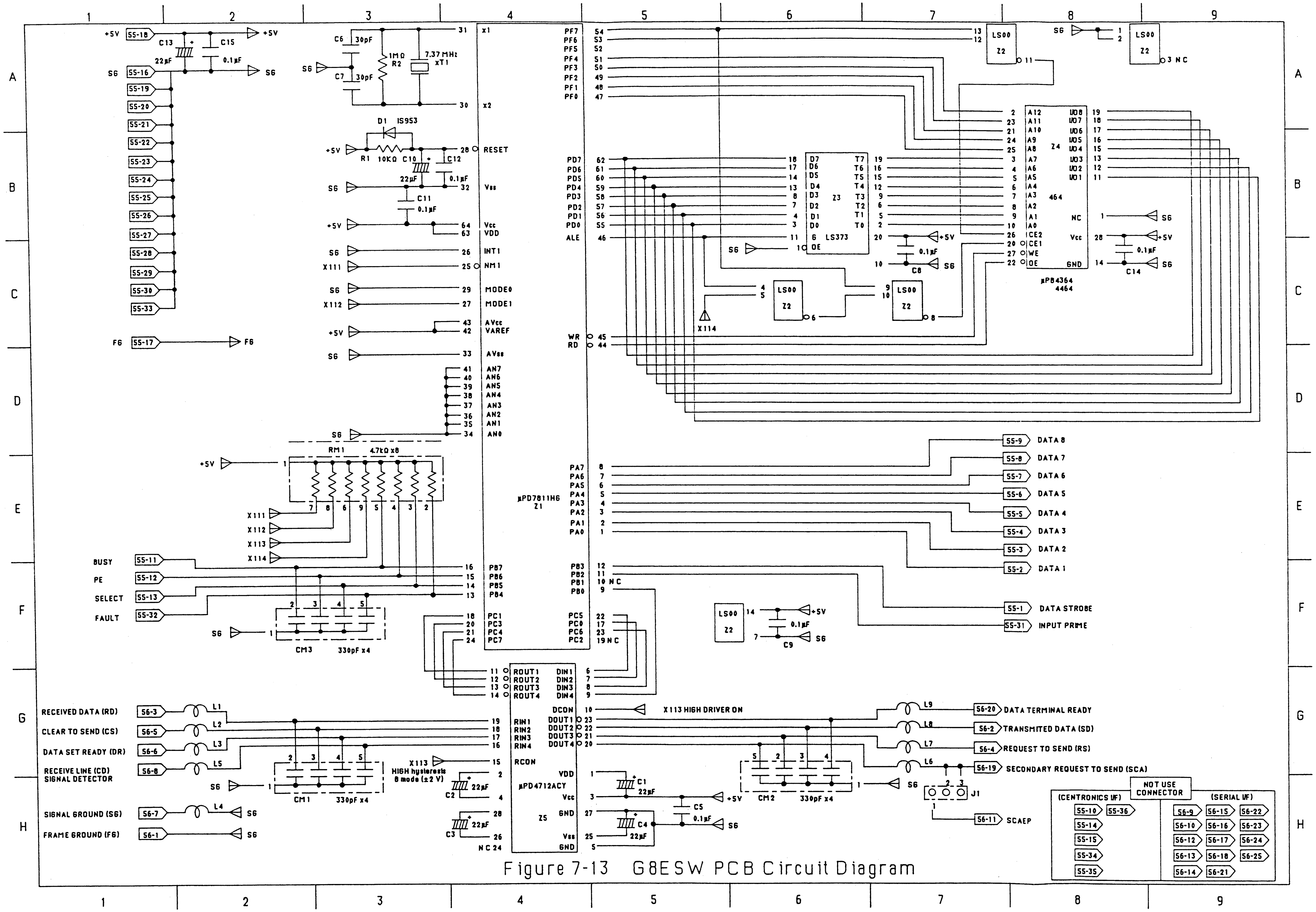

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
+5V
S5-18
C13
22μF
C15
0.1μF
S6
S5-16
S5-19
S5-20
S5-21
S5-22
S5-23
S5-24
S5-25
S5-26
S5-27
S5-28
S5-29
S5-30
S5-33
F6
S5-17
C6
30pF
C7
30pF
1MΩ
R2
7.37MHz
XT1
X1
X2
D1
1S953
R1
10KΩ
C10
C12
0.1μF
C11
RESET
Vss
Vcc
VDD
INT1
NM1
X111
X112
MODE0
MODE1
AVcc
VAREF
AVss
AN7
AN6
AN5
AN4
AN3
AN2
AN1
AN0
RM1
4.7kΩ x8
X113
X114
μPD7811H6
Z1
PF7
PF6
PF5
PF4
PF3
PF2
PF1
PF0
PD7
PD6
PD5
PD4
PD3
PD2
PD1
PD0
ALE
WR
RD
PA7
PA6
PA5
PA4
PA3
PA2
PA1
PA0
PB7
PB6
PB5
PB4
PB3
PB2
PB1
PB0
PC1
PC3
PC4
PC7
PC5
PC0
PC6
PC2
10 NC
19 NC
BUSY
S5-11
PE
S5-12
SELECT
S5-13
FAULT
S5-32
CM3
330pF x4
LS00
Z2
3 NC
LS373
Z3
D7
D6
D5
D4
D3
D2
D1
D0
T7
T6
T5
T4
T3
T2
T1
T0
OE
C8
A12
A11
A10
A9
A8
A7
A6
A5
A4
A3
A2
A1
A0
CE2
CE1
WE
OE
GND
NC
I/O8
I/O7
I/O6
I/O5
I/O4
I/O3
I/O2
I/O1
464
Z4
μPB4364
4464
C14
S5-9
DATA 8
S5-8
DATA 7
S5-7
DATA 6
S5-6
DATA 5
S5-5
DATA 4
S5-4
DATA 3
S5-3
DATA 2
S5-2
DATA 1
S5-1
DATA STROBE
S5-31
INPUT PRIME
C9
ROUT1
ROUT2
ROUT3
ROUT4
DIN1
DIN2
DIN3
DIN4
DCON
X113 HIGH DRIVER ON
RIN1
RIN2
RIN3
RIN4
DOUT1
DOUT2
DOUT3
DOUT4
RCON
X113
HIGH hysteresis
B mode (±2 V)
μPD4712ACY
Z5
C1
C2
C3
C4
C5
NC 24
RECEIVED DATA (RD)
S6-3
L1
CLEAR TO SEND (CS)
S6-5
L2
DATA SET READY (DR)
S6-6
L3
RECEIVE LINE (CD) SIGNAL DETECTOR
S6-8
L5
CM1
SIGNAL GROUND (SG)
S6-7
L4
FRAME GROUND (FG)
S6-1
L9
S6-20
DATA TERMINAL READY
L8
S6-2
TRANSMITED DATA (SD)
L7
S6-4
REQUEST TO SEND (RS)
L6
S6-19
SECONDARY REQUEST TO SEND (SCA)
CM2
J1
S6-11
SCAEP
NOT USE CONNECTOR
(CENTRONICS I/F)
S5-10
S5-36
S5-14
S5-15
S5-34
S5-35
(SERIAL I/F)
S6-9
S6-15
S6-22
S6-10
S6-16
S6-23
S6-12
S6-17
S6-24
S6-13
S6-18
S6-25
S6-14
S6-21

Figure 7-13 G8ESW PCB Circuit Diagram